Podium Session 1: Bladder Cancer
Monday, October 1
13:15-14:45

POD-01.01
Maintenance Treatment with Bacillus Calmette-Guérin for Non-Muscle-Invasive Urothelial Carcinoma of Bladder Cancer after Complete TUR-BT
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Introduction and Objective: We investigated the effect of maintenance therapy with intravesical instillation of Bacillus Calmette-Guérin (BCG) for high-risk non-muscle invasive bladder cancer (NMIBC) after complete transurethral resection of bladder tumors (TUR-BT).
Materials and Methods: Complete TUR-BT was designed strictly according to our policy. [Cohort 1] 41 patients were diagnosed as having recurrent or multiple NMIBC (stage Ta or T1) without carcinoma *in situ* (CIS) after complete TURBT. The patients were randomized into two treatment groups: a maintenance group (BCG, 81 mg, intravesically instilled once weekly for 8 weeks as induction therapy, followed by three once-weekly instillations at 3, 6, 12 and 18 months after initiation of the induction therapy) and a non-maintenance group (BCG, 81 mg, intravesically instilled once weekly for 8 weeks). The primary endpoint was recurrence-free survival (RFS). [Cohort 2] 47 patients were diagnosed as having with CIS after TURBT. The patients were randomized into two treatment groups: a maintenance group (BCG, 81 mg, intravesically instilled once weekly for 6 weeks as induction therapy, followed by three once-weekly instillations at 3, 6, 12 and 18 months after initiation of the induction therapy) and a non-maintenance group (BCG, 81 mg, intravesically instilled once weekly for 6 weeks). The primary endpoint was RFS.
Results: [Cohort 1] 5-year RFS rates of maintenance group and non-maintenance group were 75.3% and 74.9% respectively. The RFS rates did not show a difference in between the maintenance and non-maintenance groups. [Cohort 2] 5-year RFS rates of maintenance group and non-maintenance group were 84.0% and 84.4% respectively. The RFS rate of the maintenance group was almost similar to the non-maintenance group.
Conclusions: BCG maintenance therapy did not significantly prolong the post-TURBT RFS compared with BCG induction therapy alone after complete TUR-BT.

POD-01.02
The Role of NBI Re-TURB in the Evaluation of T1HG: Preliminary Experience
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Introduction and Objective: High grade bladder neoplasia (T1HG TCC) represents a true therapeutic challenge because of a 20-30% risk of progression. Sometimes a restaging TURBt better predicts early stage progression. Small or flat cancerous lesions on the bladder surface could be missed during white light imaging (WLI) cystoscopy. Different optical imaging techniques have been developed in an effort to minimize this failure. We investigate whether narrow band imaging (NBI) improves the detection in the follow-up of high-grade disease recurrence and progression rate (T1HG bladder neoplasm).
Materials and Methods: From 06/2010 to 6/2011 a cohort of 276 patients presenting primary bladder neoplasms underwent TURBt with Bipolar Surgimaster Scalpel in saline (TURis); out of this number 72 (26,1%) were T1HG. After a month HG cancer patients underwent re-TURBT of the previously resected area using NBI light to better characterize the "bottom of resection" and surgical margins: the aim was to evaluate, more precisely, recurrence and progression free survival time. The subsequent follow-up consisted of NBI cystoscopy with multiple biopsies, (randomly and in the previous zone of resection) each 3 months, urinary oncocytology on 3 specimens and kidney/bladder ultrasound each 6 months. The average follow-up was 12 (6-18) months.
Results: The T1HG cancer group showed a 40,2% (29/72 pts) free of disease, a relapse rate of 59,7% (43/72 pts) and a progression rate of 13,8% (10/72 pts). After NBI re-TURB we find an overall persistence of TCC in 31 (43,1%) cases: 23 (31,9%) high grade (HG) non muscle invasive disease and 8 (11,1%) high grade (HG) muscle invasive bladder cancer (T2HG). In the recurrence group (31 pts) 21 pts (29,1%) underwent WLI TURBt, while the remaining 10 (13,8%) NBI resection (located in the bed of resection in 2 cases (2,7%) and in surgical margins in 5 (6,9%)). Patients with a high grade (HG) muscle invasion disease (T2HG) were 6 (8,3%): 2 recurrences in the bed and 4 in the surgical margins related to NBI re-TURBt but only 2 (2,7%) in WL re-TURBT. We observed disease progression in 2 patients after 6 and 12 months, respectively. In the group of 41 (56,9%) patients T0, the NBI and WL re-TURB showed a recurrence in 12 pts (16,6%) and a progression in just 2 (2,7%) who presented a recurrence after 3 months, associated with CIS. The multivariate analysis showed that the most important variable of early progression was the histopathological findings at re-TURBt (p=0,01) followed by the results of the NBI re-TURBt (p=0,001), presence of CIS (p=0,02) and absence of recurrence within 3 months (p=0,02).
Conclusions: NBI re-TURBt in T1HG patients identifies subjects with high risk of early progression disease who need an immediate radical surgical treatment (early cystectomy).

POD-01.03
Contemporary Occupational Bladder Cancer: A Systematic Review and Meta-Analysis of Recently Reported Exposures that Increase Risk
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Introduction and Objective: Bladder cancer (BC) is a common disease that may arise following occupational exposure to carcinogens. Whilst improved workplace hygiene has controlled or substituted the use of known bladder carcinogens, currently between 5 and 25% of tumors still arise following workplace carcinogen exposure.
Materials and Methods: We conducted a systematic review using electronic databases and references from selected reports. Limits were applied to control for study design, sample size and publication since 1989. We analyzed data via a meta-analysis of odds ratios using fixed/random effects model.
Results: There were 82 manuscripts selected reporting 155,003 BC patients and 32.6 Million controls. We identified 29 occupations with a significantly increased risk of BC (Odds ratio (OR) >1.0,

Confidence Interval (CI) excluding 1.0) and 10 with a trend towards increased risk (elevated OR but 95% CI included 1.0). Occupations with significantly raised ORs included: Armed services (OR 1.12, CI 1.05 to 1.19), Automobile workers (OR 1.14, CI 1.12 to 1.17), Chemical workers (OR 1.10, CI 1.06 to 1.13), Cleaners/ Janitors (OR 1.06 CI 1.0 to 1.12), Clerical workers (OR 1.08 CI 1.07 to 1.10), Drivers (OR 1.08 CI 1.06 to 1.10), Electrical workers (OR 1.09 CI 1.06 to 1.12), Firefighters (OR 1.27 CI 1.0 to 1.54), Fishermen (OR 1.14 CI 1.08 to 1.20), Food workers (OR 1.13 CI 1.09 to 1.18), Gas/ Coal workers (OR 1.99 CI 1.07 to 2.91), Machinists (OR 1.59 CI 1.02 to 2.15), Mechanics (OR 1.1 CI 1.08 to 1.12), Metal workers (OR 1.11 CI 1.07 to 1.16), Nurses (OR 1.14 CI 1.08 to 1.20), Painters (OR 1.12 CI 1.08 to 1.15), Petroleum workers (OR 1.27 CI 1.09 to 1.45), Plumbers (OR 1.21 1.14 to 1.26), Railway workers (OR 1.56 CI 1.0 to 2.13), Recreational and Bar workers (OR 1.39 CI 1.29 to 1.48), and Sales workers (OR 1.11 CI 1.08 to 1.13).
Conclusions: Occupational exposure remains an important public health problem that should be understood and incorporated into patient management. Alterations in disease demographics suggest various carcinogens. We offer some explanations for these unexpected risk associations, and make a case for screening certain at-risk occupations.

POD-01.04
Training Course on Radical Cystectomy and Urinary Diversion: Does It Add to the Burden on Patients?
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Introduction and Objective: Whether performing live surgery during training courses under stress of time, audience questions, observations and comments has negative influence on surgeon performance and consequently surgical outcome or not? In this study, the surgical and oncological outcome in patients underwent radical cystectomy (RC) and urinary diversions (UD) during training courses held in a single institution were assessed.
Materials and Methods: Data files of 53 patients who underwent RC over 12 courses held between 2004 and 2011 were retrospectively reviewed. Demographic and peri-operative data were analyzed. Early and late post-operative complications were stratified according to modified Clavien classification. Number of re-admissions, secondary interventions and patients' survival were reported. Analyzed data of training group (TG) were compared with those of 46 patients (non-training group NTG) which underwent RC in consecutive weeks to training courses.
Results: Patients' demographics and tumor characteristics were comparable; however, ileal loop conduit was fewer in TG group (10% vs. 28%; p= 0.04). Early postoperative complications were lower in TG (19 % vs. 43%; P= 0.007). Post operative fever (grade I) was the most frequently reported complication in both groups (33%). Significant blood loss was less in TG group (7.5% vs. 24%; p= 0.023); however, there was no difference in blood transfusion rates (30% vs. 26 %; p=0.4). One patient died in NTG due to pulmonary thromboembolism. No difference was detected between groups in late complications (11% vs. 13%; p=0.5). Adhesive intestinal obstruction was the most common cause for re-admission (6%). Logistic regression analysis demonstrated that TG cases was the only predictor for fewer early post operative complications (P= 0.003; 95% Confidence interval= 0.08 - 0.58). At mean follow up ± SD (40±5 months), log rank analysis demonstrated comparable overall survival between two groups (77% vs. 66%, p=0.8).
Conclusions: Patients undergoing RC in training courses have lower postoperative complications than those undergoing RC during routine practice. It seems that live surgeries during training courses do not have negative impact on surgical nor oncological outcomes.

POD-01.05
Does TNM 2010 Nodal Staging Provide a Better Prognostic Value than Lymph Node Density in Patients Underwent Radical Cystectomy with Standard Lymph Node Dissection
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Introduction and Objective: The TNM seventh edition (2010) for nodal staging in bladder cancer was based on the number and location of metastatic lymph nodes (in the true pelvis or in the common iliac region). Previous studies have demonstrated that lymph node density (LND) was superior to TNM nodal staging (TNM sixth edition, 2002) in predicting prognosis of node metastatic patients except those with small numbers of lymph nodes removed. With this study, we wanted to compare TNM 2010 nodal staging with LND on the prognostic value in a cystectomy population with standard lymph node dissection.
Materials and Methods: From May 2002 to September 2011, a total of 265 consecutive patients with bladder urothelial cell carcinoma underwent radical cystectomy with pelvic lymph node dissection in our single center. The pelvic lymph node dissection was conducted in a standard template, including bilateral hypogastric, obturator, external iliac and commom iliac lymph nodes. All patients with positive lymph nodes were registered meticulously for LND and TNM 2010 nodal staging. Univariate and multivariate analysis for cancer-specific survival (CSS) and overall survival (OS) was performed by the Kaplan-Meier method with the long-rank test.
Results: There was 23.4% (62/265) of patients with pelvic lymph node metatstasis who were included in this study. The median of removed lymph nodes and LND was 11(2-24) and 0.33(0.07-1.00), respectively. On univariate analysis, TNM 2010 nodal staging and LND were both significant predictors of CSS and OS($P < 0.05$). However, on multivariate analysis, only TNM 2010 nodal staging (HR 2.35; $P < 0.05$) can predict the decreased CSS and OS.
Conclusions: The new TNM 2010 nodal staging was an independent predictor of CSS and OS in node metastatic patients, and was better than LND when small numbers of lymph nodes were removed.

POD-01.06
Pathological Nodal Staging Scores for Bladder Cancer: A Decision Tool for Adjuvant Therapy After Radical Cystectomy
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Montréal, Montréal, Canada; [8]University of Southern California, Los Angeles, USA; [9]University of Texas Southwestern Medical Center, Dallas, USA; [10]McGill University Health Centre, Montréal, Canada; [11]University of Regensburg, Regensburg, Germany; [12]Baylor College of Medicine, Houston, USA; [13]Memorial Sloan-Kettering Cancer Center, New York, USA

Introduction and Objective: Radical cystectomy (RC) with pelvic lymph node dissection (LND) is the standard of care for high risk non-muscle-invasive and muscle-invasive bladder cancer. We sought to develop a model that allows quantification of the likelihood that a pathologically node-negative patient has, indeed, no positive nodes.
Materials and Methods: We collected data from 4,335 patients treated with RC and LND without neo-adjuvant chemotherapy at 12 academic centers. We estimated the sensitivity of pathologic nodal staging using a beta-binomial model and developed pathologic (post-operative) nodal staging scores (pNSS) which represent the probability that a patient is correctly staged as node-negative as a function of the number of examined nodes.
Results: Overall, the probability of missing a positive node decreases with increasing number of nodes examined (52% if three, 40% if five and 26% if ten nodes were examined). The proportion of having a positive node increased proportionally with advancing pathological T-stage and lymphovascular invasion (LVI). Postoperatively, patients with LVI with 25 examined nodes would have a pNSS of 80% (pT1), 88% (pT2) and 66% (pT3-T4), whereas 10 examined nodes were sufficient for pNSS exceeding 90% in patients with no LVI and pT0-T2 tumors (Table 1).
Conclusions: We developed a tool that estimates the likelihood of tumor metastases to lymph nodes in bladder cancer patients treated with RC by evaluating the number of examined nodes, the pathologic T-stage and LVI. The pNSS indicates the adequacy of nodal staging in lymph node negative patients. This tool could help to refine clinical decision-making regarding adjuvant chemotherapy, follow-up scheduling, and inclusion in clinical trials.

POD-01.07
Utilization of Peri-operative Chemotherapy for Bladder Cancer in Ontario: A Population-Based Study
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Introduction and Objective: Evidence from clinical trials and international guidelines support the use of perioperative chemotherapy for patients with muscle-invasive bladder cancer undergoing cystectomy, particularly in the neoadjuvant (NACT) setting. Here we describe delivery of perioperative NACT as well as adjuvant chemotherapy (ACT) in the general population of Ontario, Canada.
Materials and Methods: Electronic records of treatment were linked to the population-based Ontario Cancer Registry to identify all patients who underwent cystectomy for bladder cancer in Ontario 1992-2006. Census data concerning median household income were linked to the registry to provide an ecologic measure of socioeconomic status (SES). Utilization was compared across 3 study periods: 1992-96, 1997-01, 2002-06. Logistic regression was used to analyze temporal trends in the use of perioperative chemotherapy, while controlling for changes in case mix.
Results: In 1992-2006, 4886 patients underwent cystectomy (1359 had curative-intent radiotherapy) and the absolute number of surgical procedures done yearly nearly doubled over the study period. The majority of histo-pathology revealed urothelial carcinoma (92%) and 87% of these surgical cases were found to be pathologic stage 2 or greater. The overall survival of patients treated with radical surgery did not vary over the three study periods with a 3- and 5- year survival of 47.9% (45.6-50.1) and 39.5% (37.1-41.9) respectively during the most recent era. Of those undergoing cystectomy in Ontario, 736 (16%) received perioperative chemotherapy; NACT and ACT were used in 142 (3%) and 623 (14%) of cases respectively. While the use of NACT did not change over the 3 study periods (4%, 2%, 3%; p=0.080), utilization of ACT increased a small degree with time (10%, 15%, 16%; p<0.001). Use of perioperative chemotherapy varied widely across catchment areas of provincial cancer centers (11% to 22%, p<0.001). As expected, patients with lower stage disease and those with higher levels of comorbidity were less likely to receive CT (p<0.001), but after controlling for stage and comorbidity, older patients and residents of poorer communities were also significantly less likely to receive CT (p<0.001).
Conclusions: Despite accumulating evidence and guideline development over the study period, chemotherapy remains substantially underutilized in the general population. The observed variations in use of chemotherapy across geographic regions and SES, may represent opportunities for further outcomes research as a natural experiment and possibly to target future interventions to optimize utilization.

POD-01.08
Biomarker Analysis and Final Results of INT70/09 Phase II Proof-of-Concept Study of Pazopanib (PZP) in Refractory Urothelial Cancer (UC)
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POD-01.06, Table 1. Pathological nodal staging score (pNSS) for selected values of number of nodes examined

	Patients without LVI							
Nb. of nodes examined	**1**	**3**	**5**	**8**	**10**	**15**	**20**	**25**
Ta-Tis	91.2%	93.8%	95.1%	96.3%	96.8%	97.6%	98.1%	98.4%
T1	87.4%	91.0%	92.9%	94.6%	95.3%	96.5%	97.2%	97.6%
T2	86.9%	88.7%	89.1%	93.2%	94.1%	95.5%	96.4%	97.0%
T3-T4	61.6%	70.0%	75.2%	80.2%	82.5%	86.4%	88.8%	90.4%
	Patients with LVI							
Nb. of nodes examined	**2**	**5**	**8**	**10**	**15**	**20**	**25**	**30**
T1	46.4%	54.2%	61.1%	77.5%	83.6%	77.7%	80.1%	82.4%
T2	60.6%	70.3%	76.0%	78.7%	83.2%	86.1%	87.7%	89.3%
T3-T4	27.7%	38.3%	44.4%	49.2%	56.5%	61.8%	65.9%	69.2%

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Introduction and Objective: Discouraging results have been achieved with standard and novel compounds in refractory UC. The final results with biomarker analysis of INT70/09 trial with pazopanib are presented.
Materials and Methods: Patients failing ≥ 1 chemotherapy regimen for metastatic disease underwent PZP 800 mg once daily until PD or unacceptable toxicity. CT scan and PET scan were planned at baseline and q4weeks thereafter. Independent review of all CT scans was made and ≥ 5 RECIST CR+PR were required to conclude for activity according to Simon's 2-stage design. Fifty mL of EDTA blood samples were collected at baseline and q4wks in all patients to analyze plasma VEGF, sVEGFR-1,-2 and -3, c-Kit, IL-6, 8 and 12 by multiplex ELISA plates.
Results: A total of 41 patients were enrolled from 02/2010 to 07/2011. Fifteen patients (37%) had UC of the upper urinary tract. Twenty/41 patients were treated in 3rd line or beyond. Nineteen patients (46%) were CDDP-refractory and 22 (54%) had hepatic metastases. Twenty seven (66%) had ECOG PS 1-2. 7 patients (17%) had a confirmed PR, 24 had a SD (76% clinical benefit). Twenty patients (49%) had a confirmed necrotic evolution of metastases and/or a decreased SUV at PET consistent with PR. Median PFS and OS (95% CL) were 2.6 (1.7-3.7) and 4.7 mos (4.2-7.3), respectively but 7 patients (17%) had long-term cure for >10mos (4/7 beyond 2nd line). G3 hypertension occurred in 2 patients, diarrhoea in 5, anemia and hand-foot syndrome in 3 patients each.
Significant increase from T0 (baseline) to T1 (+4wks) level was observed for VEGF ($p<0.0001$), IL6 ($p<0.0129$) and IL8 ($p<0.0013$) and decrease for VEGFR2 and c-Kit ($p<0.0001$ each). Rising $IL8^{T1}$ levels significantly associated with RECIST progression at covariance analysis ($p=0.0104$). Elevated $IL8^{T1}$ levels (IQ range, HR=2.11), liver mets (HR=2.33), PS (HR=3.73) and upper tract UC (HR=0.33) were significant variables for OS at multivariate Cox analysis.
Conclusions: The trial met the primary endpoint. Increasing levels of IL8 were associated with PD and worse outcome. Future investigation should aim at targeting IL8 to improve efficacy results by prolonging responses.

POD-01.09
Sequential Chemotherapy with Gemcitabine Plus Carboplatin, Followed by Additional Docetaxel for Aged Patients with Advanced Bladder Cancer

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Introduction and Objective: We retrospectively evaluated the feasibility and effectiveness of a sequential chemotherapy wihtout cisplatin for the patients 70 years or older with advanced bladder cancer.
Materials and Methods: Forty-seven patients with advanced bladder cancer (33 men and 14 women) with the age of 70 years or older were enrolled. They were treated at our clinic between August 2004 and December 2010. Their average age was 80.0 years old (70–86), average Ccr was 37.0 ml/min (14.5–113.0), and an average follow-up period was 17.4 months (10–55). There were 15 recurrent cases after radical surgery and 32 inoperable cases (T4b or metastatic). As for prior chemotherapy, 6 underwent MVAC therapy. The therapeutic regimen consisted of 2 lines: gemcitabine/carboplatin (GC) therapy as the first line, with two courses as a set; GC/docetaxel (GCD) therapy as the second line if the response in the first line was insufficient. GC consisted of 800mg/m^2 gemcitabine on days 1, 8, and 15 and carboplatin (AUC 4) on day 2. If this regimen was effective, another 2 courses of GC was performed. If this regimen did not induce any tumor size reduction, we switched to GCD, which consisted of 800mg/m^2 gemcitabine on days 1 and 8, 70mg/m^2 docetaxel on day 1, and carboplatin(AUC 3) on day 2. Treatment efficacy was checked every 2 course according to the RECIST version 1.1.
Results: Of the 47 subjects who had undergone the GC therapy, the response rate was 38.3% (CR+PR) with 5 and 12 subjects exhibiting a complete response (CR) and a partial response (PR), respectively; the average response duration was 15.7 months (2–42). Of the subjects with MVAC resistance, 1 exhibited a CR and 3 showed a PR. The response rates of 9 instances of GCDwas 11.1%; the overall median survival was 15.0 months throughout the sequential chemotherapy. Adverse events (AE) of grade 3 or higher occurred in 30 of those who had undergone the GC therapy (63.8%). Bone marrow suppression was observed in 30 subjects (61.7%), whereas only 3 (9.0%) developed digestive symptoms. No subjects experienced the deterioration of their renal functions.
Conclusions: Although the present study is small and preliminary, the present sequential chemotherapy is safe and active for advanced bladder cancer of the patients seventy years or older. GC regimen achieved relatively high response rate (38.3%) in advanced bladder cancer including M-VAC-resistant case. The median overall survival of 15 months is acceptable when average age of 80 year for the subjects is taken into consideration. However, GCD had limited effectiveness for non-responder of GC.

Podium Session 2: Male LUTS and BPH
Monday, October 1
13:15-14:45

POD-02.01
Comparative Effectiveness of Surgical Therapies for Benign Prostatic Hyperplasia
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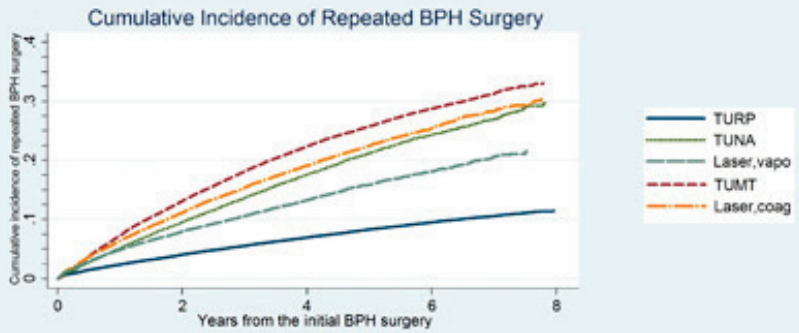
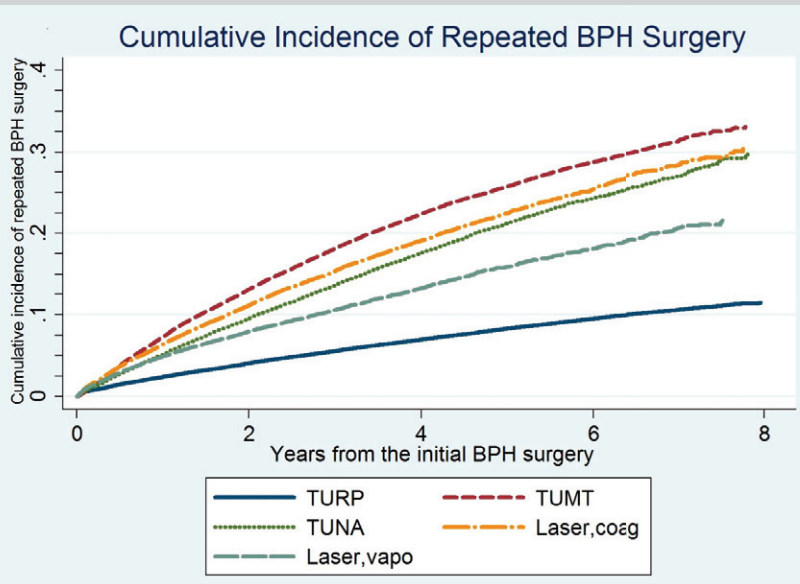
Introduction and Objective: There has been a rapid rise in the use of minimally invasive surgical therapies for benign prostatic hyperplasia (BPH) in the last decade. Transurethral resection of the prostate (TURP) remains the gold standard, but is now used in a minority of cases. By investigating complications and retreatment rates we compared the effectiveness of transurethral resection of the prostate (TURP) to transurethral microwave therapy (TUMT), transurethral needle ablation (TUNA), laser vaporization and laser coagulation of the prostate.
Materials and Methods: Using 100% Medicare files from 2000 through 2008 we identified claims for the above listed BPH surgeries. Age, race, income and education level by zip code, and year of surgery were documented for each procedure. We compared the frequency of claims for treatment of surgical complications using chi square analysis, and the incidence and adjusted hazard ratio for repeat BPH surgery of any type.
Results: There were 629,314 patients included with a mean follow-up of 3.6 years. The most common complication was urethral stricture in 6.1%, 2.3%, and 2.7% of patients undergoing TURP, TUNA, and TUMT, respectively. Bladder neck contracture occurred at a rate of 2.7%, and <1% for TURP and TUNA respectively. The 5-year Kaplan-Meyer estimates for repeat BPH surgery ranged from 8.3% after TURP to 25.8% after TUMT (HR=3.52, CI 3.46-3.59) (see Figure).
Conclusions: TURP has a slightly increased risk of complications including urethral stricture and bladder neck contracture but a dramatically lower risk of repeat BPH surgery compared to other treatments.

POD-02.01, Figure 1.



POD-02.01, Figure 2.



POD-02.02
The Continuous Evolution of the Greenlight Laser Photo-Selective Vaporisation of the Prostate: Better Outcomes with the XPS System
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Introduction and Objective: Transurethral resection of the prostate (TURP) has been the gold standard for outflow tract surgery. However it is associated with significant morbidity and is far from the ideal procedure. Laser vaporisation of the prostate (PVP) was introduced with the aim of achieving the same improvement in lower urinary tract symptoms as TURP but with fewer complications. The demand for a safer procedure has increased with an increasingly ageing population with multiple co-morbidities. Early PVP had long operative times but the new XPS generation using the Moxy fibre aims to achieve a bigger cavity in a shorter time with less bleeding.
Materials and Methods: We looked retrospectively at all patients who underwent PVP using the 180-W XPS Greenlight laser between July 2010 and October 2011. Data on patient demographics, prostate volume, IPSS score and flow rate both pre and post-operatively were collated and compared at three months.
Results: There were 94 patients with an average age of 72.6 years who underwent PVP. 26 (28%) had a prostate volume greater than 80cc. Eighteen (19%) were anti-coagulated at the time of surgery. At three months, there was a mean reduction in IPSS score of 9.9 points and a mean increase in flow rate of 10.3 mls/sec. Reduction in prostate size was 51%, 49% and 48% for those with pre-operative prostate volumes of <40cc, 40-80cc, and >80cc respectively. There were 86 (92%) day cases. None required transfusion. There were 4 (5%) cases of urosepsis and 8 (9%) cases of clot retention.
Conclusions: Early experience with PVP using the new XPR generation system has

produced promising results with minimal complications.

POD-02.03
A Comparative Randomized Prospective Study to Evaluate Efficacy and Safety of Combination of Tamsulosin and Tadalafil versus Tamsulosin or Tadalafil Alone in Patients with Lower Urinary Tract Symptoms Due to Benign Prostatic Hyperplasia
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Introduction and Objective: Alpha1-blockers are the first-line monotherapy for lower urinary tract symptoms (LUTS). Phosphodiesterase type 5 (PDE5) inhibitors are the first-line treatment for erectile dysfunction (ED). Numerous studies have shown a significant association of ED with LUTS, but a causal relationship is not clear. The aim of the present study was to evaluate the efficacy of Tamsulosin and PDE 5 inhibitor, tadalafil in patients with LUTS due to BPH with or without ED.
Materials and Methods: In this randomized study a total of 85 men complaining of LUTS due to BPH were included. Twenty-nine patients received tamsulosin 0.4 mg/day alone (Group A), 28 patients received tadalafil 10mg/day (Group B) and combination therapy (tamsulosin and tadalafil both) was instituted in 28 patients (Group C). They were evaluated for International Prostatic Symptom Score (IPSS), International Index of Erectile Function questionnaire (IIEF5), Quality of Life (IPSS QoL), maximum urinary flow rate (Qmax), post void residual volume (PVR) and safety parameters before start of treatment and at 3 months following treatment.
Results: A significant improvement in IPSS score was observed in all the 3 groups, A, B and C (-50.90%, $p<0.05$; -33.50%, $p<0.05$ and -53.90%, $p<0.05$ respectively). IIEF5 score increased significantly in these 3 groups (+39.28%, $p<0.05$; +45.96%, $p<0.05$ and +60.23%, $p<0.05$ respectively). In all the 3 groups, a significant increase in Qmax and decrease in PVR were observed (33.99%,$p<0.05$; 29.78%, $p<0.05$ and 37.04%, $p<0.05$) and (-60.90%, $p<0.05$; -49.45%,$p<0.05$ and -62.97%,$p<0.05$ respectively). The QoL scores also improved (-73.35%, $p<0.05$; -70.26%, $p<0.05$ and -79.65%, $p<0.05$ respectively). Drop-out rate was 9.4% (noncompliance 3.5% and side-effects 5.9%). Side-effects were dyspepsia, heartburn, headache, flushing, myalgia and backache. None of the participants experienced any severe or serious adverse events.
Conclusions: Tamsulosin and tadalafil alone or in combination cause a significant improvement in patients with LUTS. Their erectile function also improves with these medications. The improvement is better with combination therapy as comparison to single agent alone.

POD-02.04
The Role of Dutasteride in Preventing BPH-Associated Clinical Progression Among Asymptomatic Men with an Enlarged Prostate
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Introduction and Objective: Prostatic enlargement is a risk factor for acute urinary retention (AUR), need for surgery, as well as developing lower urinary tract symptoms (LUTS). Treatment with 5-alpha reductase inhibitors has been studied in men with moderate-severe LUTS. Our study aims to assess the role of dutasteride in preventing clinical progression in asymptomatic men with larger prostates.
Materials and Methods: Using data obtained from the REDUCE study, we assessed the outcomes of men with a prostate size >40 mL and baseline International Prostate Symptom Score (IPSS) <8. Men treated with any medications for benign prostatic hyperplasia (BPH) at time of study entry or who did not complete the end-of-study IPSS questionnaire were excluded. We compared the risk of BPH clinical progression at four years between those randomized to dutasteride versus placebo. BPH clinical progression was defined as a ≥4 point worsening on IPSS, AUR related to BPH, urinary tract infection, or BPH related surgery. A multivariable logistic regression analysis (MVA) assessed the effect of dutasteride on BPH clinical progression adjusting for age, IPSS, prostate volume, post-void residual, and peak urinary flow rate.
Results: Our study cohort consisted of 1617 men; 825 on placebo, 792 on dutasteride. A total of 464 patients (29%) experienced BPH clinical progression; 297(36%) on placebo, 167(21%) on dutasteride ($P<0.001$). The relative risk reduction (RRR) was 44% and the absolute risk reduction was 15%. Among the 76 patients (4.7%) who had AUR and the 46 patients (2.8%) who had BPH-related surgery, the RRR for dutasteride was 79% and 81%, respectively. On MVA, dutasteride significantly reduced BPH clinical progression with an odds ratio of 0.47(95% CI 0.37-0.59, $P<0.001$).
Conclusions: This study is the first to explore the benefit of treating asymptomatic or mildly symptomatic men with enlarged prostates. In this cohort, dutasteride significantly decreased the incidence of BPH clinical progression.

POD-02.05
Pharmacologic Therapy in Men with New-onset Lower Urinary Tract Symptoms
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Introduction and Objective: Previous studies have demonstrated that a minority of men seek health care for their lower urinary tract symptoms. Few, however, have evaluated the proportion of men with new-onset symptoms who do not receive medical therapy and may be candidates for self-management.
Materials and Methods: As part of the California Men's Health Study, 39,222 men ages 45-69 years old from the Southern California Kaiser Permanente Health plan were surveyed in 2002-2003 and again in 2006-2007. Men who reported none-mild symptoms (International Prostate Symptom Score 0-7), with no diagnosis of benign prostatic hyperplasia and who were not on medications for lower urinary tract symptoms at baseline in 2002 (N=20,766) were followed to identify those who reported a score of 8-19 (moderate) or 20 or higher (severe) in follow-up. Linked pharmacy records were examined to determine the filling of prescriptions for alpha blockers and/or 5-alpha reductase inhibitors following baseline and medical records were examined to determine minimally invasive or surgical procedures and urology clinic visits.
Results: Of the 10,269 men who had none-mild symptoms at baseline, 4229 (41%) reported moderate-severe symptoms at follow-up. Of them, 363 (8.6%) had record of a pharmacologic treatment for lower urinary tract symptoms being dispensed, 3 (0.7%) had a minimally invasive or surgical procedure for BPH and 3863 (91.4%) had no treatment recorded. Men who progressed to severe symptoms (IPSS ≥ 20) at follow-up were more likely to be on medication for BPH (OR=8.16,

95% CI= 5.89, 11.30), have a diagnosis of BPH (OR=4.83, 95% CI=3.51, 6.65) or have seen a urologist in the intervening years (OR=2.66, 95% CI= 1.96, 3.62) when compared to men who did not progress to severe symptoms (IPSS < 20).
Conclusions: These data demonstrate that in this system, over 91% of men with new onset LUTS over four years do not have a pharmacologic or surgical therapy for their symptoms. This substantial proportion of men may prove good candidates for a self-management plan.

POD-02.06
Non-voiding Contractions Induced by Bladder Outlet Obstruction: Effects of C-fiber's Desensitization and an Alpha 1-adrenoceptor Blocker Naftopidil
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Introduction and Objective: Non-voiding contractions (NVCs) are observed on cystometrogram in animal models of bladder outlet obstruction (BOO). NVCs are considered to be myogenic and may be modulated by the nervous system innervating the bladder because α1-adrenoceptor blockers attenuate NVCs. An α1-blocker, naftopidil is known to suppress C-fiber signaling in a rat model of cerebral infarction. To investigate whether C-fiber signaling is associated with the generation of NVCs and inhibitory effect of α1-blockers on NVCs, the effects of resiniferatoxin (RTX) and naftopidil on NVCs were examined in a rat model of BOO.
Materials and Methods: BOO was induced by incomplete urethral ligation in female Wistar rats (n=16). Cystometry was performed 4 weeks after the induction of BOO. RTX (0.3 mg/kg) was injected subcutaneously 3 days before cystometry in 7 rats. Bladder capacity (BC) and the frequency and amplitude of NVCs at 80% BC were measured before and after intravenous administration of naftopidil (1 mg/kg). The effect of naftopidil (60 μM) on spontaneous contractions in bladder strips in-vitro from female Wistar rats with BOO of 4 weeks duration (n=8) were also examined. Data were expressed as mean ± SEM.
Results: RTX-treatment increased BC and the frequency of NVCs (6.3 ± 0.9 and 9.5 ± 0.8 ml for BC, and 1.6 ± 0.2 and 2.5 ± 0.2 cycle/min for the frequency of NVCs, $p<0.05$ for both). Naftopidil increased BC and attenuated NVCs in BOO rats (6.3 ± 0.9 to 7.2 ± 0.8 ml for BC, and 11.1 ± 1.8 to 7.0 ± 1.8 cmH_2O for the amplitude of NVCs, $p<0.05$ for both), and decreased the frequency of NVCs even in RTX-treated BOO rats (2.5 ± 0.2 to 1.2 ± 0.1 cycle/min, $p<0.05$). Naftopidil did not attenuate spontaneous contractions in bladder strips *in vitro*.
Conclusions: C-fiber afferent is involved in neural circuits for micturition reflex in rats with BOO, but not essential for the generation of NVCs. The inhibitory effect of naftopidil on NVCs is not derived from the inhibition of C-fiber signaling or the direct inhibition of spontaneous contractile activity. Naftopidil may attenuate NVCs by the suppression of a neural pathway involving RTX-insensitive afferents.

POD-02.07
Health Information Quality on the Internet in Benign Prostatic Hyperplasia and its Treatment: A Multilingual Evaluation
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Introduction and Objective: Internet information quality for benign prostatic hyperplasia (BPH) is considered variable but no comprehensive analysis exists. Our objective was to compare the quality of BPH-related websites and to assess for language and other differences across Western languages.
Materials and Methods: Health on the Net (HON) principles may be applied to websites using an automated toolbar function. Using the Google search engine (www.Google.com), in 2011, 9000 websites were assessed for benign prostatic hyperplasia and associated common surgical and medical treatments. For disease, keywords searched were BPH, benign prostatic hyperplasia, benign prostatic hypertrophy, benign prostatic enlargement, prostomegaly; for surgical treatment, TURP, transurethral resection of prostate, greenlight laser prostate, laser prostate surgery, holmium laser prostate, diode laser prostate, prostatectomy; and for medical treatment, medical therapy prostate, alpha blocker prostate and alpha reductase prostate. All searches were performed in English, French, German and Spanish. The first 150 websites in each language had HON principles measured. A further analysis of site sponsorship was performed.
Results: A total of 9000 websites were assessed; disease search (3000) surgical treatment (4200) and medical treatment (1800). Regardless of language or search keyword, the majority of sites are not HON accredited. English had more HON accredited sites than French, Spanish or German. Significant differences were found comparing language, disease, surgical and medical treatments. For disease search, the most accredited sites were commercial sites (34.4%); others (18.7%); non-profit organisations (16.9%); institutions/Government/Education (16.3%); physician/surgeon (8.3%) and lastly other health professional sites (3.4%). Similar trends were observed for surgical and medical treatments.
Conclusions: A lack of validation of most BPH sites related to the disease and treatment should be appreciated by urologists. Further, there is a discrepancy in quality and number of websites across major Western European languages. We need to encourage informative, ethical and reliable complimentary health websites on the Internet and direct patients to them.

POD-02.08
Day Surgery Bipolar Plasmakinetic Transurethral Resection of the Prostate (pk-TURP): A 5-Year Prospective Study
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Introduction and Objective: Monopolar Transurethral resection of the prostate (m-TURP) is the gold standard for symptomatic treatment of BPH. Bipolar pk-TURP has similar efficacy and improved safety profile over m-TURP. However there is limited published data regarding the safety and clinical outcome of pk-TURP as a day-surgery (DS) procedure. Our objectives were to evaluate the safety and clinical outcome of DS pk-TURP over a 5-year period.
Materials and Methods: There were 126 patients with BOO who underwent day-surgery pk-TURP from 2005 to 2011. They were discharged on the same day after 4 hours of bladder saline irrigation and had trial without catheter (TWOC) 48 hours later in outpatient clinic. International Prostate Symptom Score (IPSS), Bothersome Score, maximum urinary flow rates (Qmax), postvoid residual urine (PVRU)

and any surgical complications were assessed at 1, 6, 12 months.
Results: There were 124 out of 126 patients (98.4%), mean age 65 years, successfully discharged on the same day with no complications. There were 92.9% (n=116) patients who had successful TWOC in the clinic. The mean surgical resection time was 51 minutes\mean resected prostate weight was 19.1 grams and mean bladder washout duration was 6.6 hours. No patient required blood transfusion. One patient had secondary haemorrhage requiring hospitalization. The clinical outcomes were summarised in Table 1. The overall stricture rate was 15.9% (n=20): 19.2% (14 cases out of 73) up to 2007 and from 2008 onwards 11.5% (6 out of 53). One patient had urinary retention a year later.
Conclusions: DS pk-TURP is safe with few complications. Our initial stricture rate was high at 19.2% and following serial urethral dilatation, this decreased to 11.5%. Only 1 patient required hospitalization. The clinical outcome is similar to published literature on inpatient pk-TURP. Therefore, pk-TURP is suitable as a day-surgery procedure and can be cost-effective for both patient and healthcare institution. pk-TURP can be offered as an alternative standard treatment for symptomatic BPH.

POD-02.08, Table 1: Clinical outcomes for pk-TURP

	Baseline	6 months	12months
IPSS	18.4 ± 8.7	6.9 ± 5.4	
(p=0.0057)	5.6 ± 5.8		
(p=0.0048)			
Qmax (ml/s)	7.3 ± 4.5	13.9 ± 7.2	
(p<0.0001)	15.3 ± 6.1		
(p<0.0001)			
PVRU (ml)	139.8 ± 148.7	31.5 ± 49.0	
(p<0.0001)	23.4 ± 35.6		
(p<0.0001)			

(Paired t-test comparing baseline and 6 and 12months)

Podium Session 3: Urinary Incontinence
Monday, October 1
15:15-16:45

POD-03.01
Development of a Tissue Culture In Vitro Test System for Evaluation of Biocompatibility of Alloplastic Materials
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Introduction and Objective: Optimization of biocompatibility issues is a major requirement for alloplastic materials, currently applied in surgical approaches for hernia, incontinence and prolapse situations. Tissue ingrowth/adherence and formation of connective tissue seem to have important influence in mesh incorporation at the implant site.
Materials and Methods: In an in-vitro approach we randomly investigated 7 different mesh types, currently used in various indications with regard to their adherence performance. Using a tissue culture approach meshes were incubated with tissue representative for fibroblasts, muscle cells and endothelial cells originating from 10 different patients. After 6 weeks the meshes were assessed microscopically and a ranking of their adherence performance was established.
Results: Tissue culture was successful in 100% of the probes. No interindividual differences concerning the growth and adherence performance after incubation with the different meshes in the investigated 10 patients were remarked. The ranking was consistent in all patients. In this test system, PVDF (Dynamesh®) was the mesh with the best adherence score.
Conclusions: The test system was feasible and reproducible suggesting pore size to be a predictor for adherence performance. The test system may be a helpful tool for further investigations and the predictive value should be assessed in further *in vitro* and *in vivo* investigations.

POD-03.02
Evaluation of Sleep Quantity and Quality in Older Adults with Nocturia Using Portable Electroencephalogram Acquisition Device
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Introduction and Objective: Nocturia is not only bothersome for patients and their partner because of sleep disturbance, but is also associated with increased morbidity such as bone fracture and depression. Although the state of sleep should be evaluated objectively by electroencephalography (EEG), the disturbed sleep has never been evaluated by EEG. We investigated the state of sleep in the older adults with nocturia by use of portable EEG acquisition device
Materials and Methods: The sleep EEG was recorded at home for 2 or more continuous days in 17 older adults with nocturia and 10 adult volunteers by the portable EEG acquisition device (Proassist, Ltd., Japan). Frequency volume charts were simultaneously recorded in all those subjects.
Results: The average ages of older adults and volunteer groups were 72.6±0.6 and 37.7±11.3 years old, respectively. The measurement of sleep EEG in older adults and volunteers were performed totally 43 and 12 times (average 2.6±1.6 times/older adult, 1.2±0.4 times/volunteer). The total number of nocturnal voiding during examination was 90 and average frequency of nocturia was 2.1±1.2 times/older adult. There were significant differences in time in bed, sleep period time, total wake time after sleep onset, deep sleep time, and sleep efficacy between older adults with nocturia and adult volunteers without nocturia. Older adults with hours of undisturbed sleep (HUS) (defined as the time between sleep onset and the first awakening to voiding) within 2 sleep cycles had longer wake time after sleep onset and shorter deep sleep time and lower sleep efficacy compared to those with HUS more than 2 sleep cycles.
Conclusions: We objectively demonstrated with portable EEG acquisition device that not only the frequency of nocturnal voiding but also the time of awakening deteriorates the quality of sleep in older adults with nocturia. Therefore, it is very important to pay attention to both the frequency of nocturnal voiding and the time of awakening for improvement of QOL in older adults with nocturia.

POD-03.03
Lidocaine Bladder Instillation for Prevention of Autonomic Dysreflexia during Suprapubic Cystostomy Placement for Upper Spinal Cord Lesion
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Introduction and Objective: Autonomic dysreflexia (AD) is a common and potentially dangerous hypertensive response to stimulation below the level of injury occurs in patients with spinal cord injury at T6 or above. The purpose of this study was to determine whether lidocaine instillation limits AD during suprapubic puncture for cystostomy (SPC) placement.
Materials and Methods: Between January 1999 and March 2008, a total of 47 cases underwent cystostomy placement using the suprapubic puncture kit. Subjects were separated into four groups, non spinal cord injured group (non SCI group: 11 cases), lower spinal cord lesion group (Th7 or below: lower SCI group: 8 cases), upper spinal cord lesion without lidocaine instillation (upper SCI placebo group: 8 cases) and upper with lidocaine instillation (upper SCI lidocaine group: 20 cases). Systolic and diastolic blood pressure, heart rate and symptoms of autonomic dysreflexia were recorded. In upper lidocaine group, after the bladder was emptied by transurethral catheter, 1% lidocaine (20 mL) instilled into the bladder retained for 20 minutes prior to SPC placement under ultrasound guide. In upper SCI placebo group, 20 mL saline as placebo was instilled before SPC placement.
Results: The systolic blood pressure increased by 24, 22, 75 and 47 mmHg during SPC placement in non SCI group, lower SCI group, upper SCI-placebo group and upper SCI lidocaine group, respectively. The diastolic blood pressure increased by 6, 3, 32 and 27 mmHg, respectively. The systolic blood pressure for upper SCI placebo group had a significantly higher increase than those of any other groups. Although 63% of patients in upper SCI placebo group received intravenous nicardipine administration due to severe AD (Systolic blood pressure exceeded 200 mmHg) during procedure, only 15% in upper SCI lidocaine group received nicardipine administration ($p=0.04$).
Conclusions: Lidocaine bladder instillation significantly limits autonomic dysreflexia response in susceptible upper

spinal cord injured patients undergoing SPC placement.

POD-03.04

Effect of Solifenacin on Cognition in Geriatric Patients: Results of the Non-Interventional Study "Vesicare in Geriatric Application: VEGA"

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Introduction and Objective: Solifenacin (Vesicare®) improves all symptoms of overactive bladder (OAB) in randomised controlled trials (RCT). Anticholinergic drugs have been suggested to potentially affect cognition. Due to the specific setting of RCTs those studies do not necessarily reflect application in a general care setting. This bias is even more evident in geriatric patients, who are often excluded from RCTs. The non-interventional study VEGA assesses safety of solifenacin in a geriatric population focussing on cognitive effects.
Materials and Methods: Data were collected at 294 German offices of general practitioners from 11/2010 to 09/2011. OAB-patients aged 70 years or more receiving a flexible dose of solifenacin were assessed over a 12-week treatment duration. Changes in symptom severity were evaluated; potential impact on cognition was surveyed by Mini Mental State Examination (MMSE) at initial and final visits.
Results: A total of 917 patients were assessed; mean age was 77 ± 7 years. Concomitant disease was reported in 89%; the three most common conditions were hypertension in 82%, coronary artery disease in 28% and heart failure in 25%. Concomitant medication was reported in 86%; the three most common agents were ramipril in 33%, acetylsalicylic acid in 21% and metoprolol in 17%. 88% had previously received anticholinergic treatment which was either discontinued due to lack of efficacy or untolerability. There were 95% of patients started on solifenacin 5mg and 5% on solifenacin 10mg; 23% of patients increased dose to 10mg by the study's end. Cognition status in MMSE before and after treatment (mean 13.6 weeks) was reported in 555 patients and showed no (27-30 points), mild (18-26 points, intermediate (10-17 points) and severe impairment (>=9 points) at study initiation in 51%, 38%, 10% and 1% of patients versus 58%, 32%, 10% and 1% at study termination, respectively. Mean MMSE values were 24.6 (SD ±5.3) at study initiation versus 25.3 (SD ±5.1) at study termination.
Conclusions: This large series demonstrates well-tolerated treatment of OAB- symptoms in geriatric patients with solifenacin 5/10 mg in a general care setting. Despite learning effects that have to be considered treatment appears to be without clinically relevant impact on cognitive status.

POD-03.05

Urodynamic Safety of the Potent and Selective beta3-adrenoceptor Agonist, Mirabegron, in Males with Lower Urinary Tract Symptoms and Bladder Outlet Obstruction

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Introduction and Objective: Many men with bladder outlet obstruction (BOO) also experience overactive bladder symptoms. Mirabegron selectively enhances storage of urine during bladder filling by stimulating β3-adrenoceptors. This study aimed to evaluate the urodynamic safety of the potent and selective β3-adrenoceptor agonist, mirabegron, in males with lower urinary tract symptoms (LUTS) and BOO.
Materials and Methods: In this multicenter, double-blind, parallel-group, placebo-controlled Phase II study, males ≥45 years with LUTS for ≥3 months, BOO index ≥20, and maximum urinary flow rate (Q_{max}) ≤12 mL/sec with a voided volume of ≥120 mL during free flow were randomized 1:1:1 to receive once-daily oral mirabegron 50 or 100 mg, or placebo for 12 weeks. Primary variables were changed from Baseline to End of Treatment in Q_{max} and detrusor pressure at Q_{max} ($P_{det}Q_{max}$). Non-inferiority of mirabegron to placebo was demonstrated if the two-sided 95% CI lower limit for treatment difference was >–3 mL/sec for Q_{max}, and the upper limit was <15 cmH_2O for $P_{det}Q_{max}$.
Results: There were 200 patients who were randomized and received study drug or placebo. Demographic and baseline characteristics were similar between groups. Both mirabegron doses were non-inferior to placebo in Q_{max} and $P_{det}Q_{max}$. Adjusted mean change (SE; 95% CI for difference from placebo) from Baseline in Q_{max} (mL/sec) was –0.33 (0.370) for placebo, 0.07 (0.366; –0.63, 1.42) for mirabegron 50 mg, and 0.30 (0.388; –0.43, 1.68) for mirabegron 100 mg; $P_{det}Q_{max}$ (cmH_2O) was 2.92 (2.906), –3.03 (2.872; –13.98, 2.09), and 1.53 (3.086; –9.73, 6.96), respectively. Mean change from Baseline in Bladder Contractile Index (BCI) was not significantly different between mirabegron 50 or 100 mg and placebo. At End of Treatment, adjusted mean change in post-void residual volume from Baseline was only significantly different from placebo with mirabegron 100 mg (p=0.0459); however, this was not considered clinically meaningful. Treatment emergent adverse events (TEAEs) occurred in 43.1%, 40.0%, and 52.3% of patients on placebo, mirabegron 50 mg, and 100 mg, respectively. One patient each on placebo (catheterization required) and mirabegron 100 mg (no invasive intervention required) had a urinary retention TEAE; no serious TEAEs or deaths occurred.
Conclusions: Mirabegron did not affect the voiding urodynamics or bladder contractility index after 12 weeks of treatment in a male population with comorbid LUTS/BOO

POD-03.06

A Phase III, Randomized, Double-Blind, Placebo and Active Controlled Study of Once-Daily Mirabegron 50 mg in Patients with Overactive Bladder

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Introduction and Objective: Mirabegron is a potent and selective β_3-adrenoceptor agonist for the treatment of overactive bladder (OAB) with a mechanism of action distinct from anti-muscarinics; we report efficacy and tolerability data from a Japanese Phase III trial.
Materials and Methods: This randomized, double-blind, placebo- and tolterodine-controlled, multicenter study enrolled adult patients with OAB symptoms for ≥24 weeks. Patients with ≥8 micturitions/24 h and ≥1 urgency or urgency incontinence episode/24 h were randomized to once-daily placebo, mirabegron 50 mg, tolterodine 4 mg for 12 weeks. Primary endpoint was change from baseline to end of treatment in mean number of micturition episodes/24 h. Secondary endpoints included change from baseline to end of treatment in mean number of urgency episodes/24 h, urinary incontinence episodes/24 h, urgency incontinence episodes/24 h, and QoL domain scores on the King's Health Questionnaire. Safety assessments included adverse events (AEs), laboratory parameters, vital signs, ECG, post void residual volume.
Results: A total of 1139 patients were randomized into 3 groups (placebo: n=381; mirabegron: n=380; tolterodine: n=378 [results not presented]). Demographic and baseline characteristics were similar for all groups. At study end, mirabegron showed significant improvements versus placebo in mean number of: micturitions, urgency episodes, incontinence episodes, and urgency incontinence episodes, and also in volume voided/micturition (Table) and in QoL domain scores. The incidence of AEs in the mirabegron group was similar to the placebo group. Most AEs in the mirabegron group were mild; none were severe. The incidence of individual AEs – including cardiovascular or antimuscarinic AEs – was low and similar to placebo. The incidence of dry mouth was low and similar in the mirabegron (2.6%) and placebo groups (2.9%).
Conclusions: Mirabegron demonstrated significant improvements compared with placebo in OAB symptoms and was well tolerated. Mirabegron provides clinicians with a new approach to treat OAB patients.

POD-03.06, Table 1.

Mean change from baseline to end of treatment	Placebo	Mirabegron 50 mg
Number of micturitions/24 h	–0.86 (2.35)	–1.67 (2.21)*
Number of urgency episodes/24 h	–1.37 (3.19)	–1.85 (2.56)*
Number of incontinence episodes/24 h	–0.66 (1.86)	–1.12 (1.48)*
Number of urgency incontinence episodes/24 h	–0.60 (1.75)	–1.01 (1.34)*
Number of nocturia episodes/24 h	–0.36 (1.06)	–0.44 (0.93)
Mean volume voided/micturition (mL)	9.72 (29.09)	24. 30 (35.48)*

Data are mean (SD). *P<0.05

Podium Session 4: Prostate Cancer: Detection and Screening
Monday, October 1
15:15-16:45

POD-04.01
Clinical Usefulness of the Ultrasound Contrast Agent Perflubutane in the Diagnosis of Prostatic Cancer: A Prospective Clinical Trial

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Introduction and Objective: This study's aim is to investigate the clinical usefulness of the novel ultrasound contrast agent Perflubutane in the diagnosis of prostatic cancer.
Materials and Methods: A preliminary study was carried out in December, 2009 under the approval of institutional review board for human investigation in our hospital. We here report the results in 686 consecutive cases between January 2010 and December 2011. Before prostate biopsy two urologists, J.A. and K.S. examined digital rectal examination (DRE), B-mode ultrasonography (BU), power Doppler ultrasound (PDU), and checked lesions of suspected cancer. After intravenous infusion of Perflubutane, targeted biopsies in the suspected lesions by each modalities including Perflubutane enhanced ultrasonography (PEU) and the 14-sites systematic biopsy were done. Sensitivity, specificity, PPV, NPV, and accuracy were compared between DRE, BU, PDU, and PEU.
Results: The average age of the subjects was 68 years (36-88) and the median PSA was 7.9ng/ml (0.6 - 4195). Of 686 cases 416 were prostate cancer (60.6%). The sensitivity, specificity, PPV, NPV, and accuracy were 52.9%, 63.3%, 69.0%, 46.6%, and 57.0% by DRE, 69.2%, 43.7%, 65.5%, 48.0%, and 59.2% by BU, 66.6%, 58.9%, 71.4%, 53.4%, and 63.6% by PDU, and 66.1%, 70.0%, 77.2%, 57.3%, and 67.6% by PEU, respectively. The PPV, NPV, and accuracy were significantly greater for PEU than for all other modalities.
Conclusions: This study demonstrated significantly improved diagnostic accuracy of prostate cancer with PEU. It needs further studies to clarify the difference of PEU features between prostate cancer and non-cancerous lesions.

POD-04.02
Intravenous Cefuroxime: Does It Improve the Efficacy of Ciprofloxacin in the Prevention of Infectious Complications Following Transrectal Prostate Biopsy? A Prospective Comparative Study

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Introduction and Objective: To compare the frequency of infection following transrectal ultrasound guided biopsy of the prostate (TRUSBP) using ciprofloxacin prophylaxis with and without adding cefuroxime.
Materials and Methods: Between June 2008 and October 2009, a total of 205 consecutive patients were subjected to TRUSBP with the use of oral 500mg ciprofloxacin twice per day, 2 days before and 3 days after the biopsy and defined as group A. Starting from November 2009 and onwards, 250 consecutive patients were subjected to TRUSBP using the same previous protocol of antibiotic prophylaxis with the addition of intravenous (IV) 1.5g cefuroxime given 30 minutes before the procedure and defined as group B. The incidence of post-TRUSBP sepsis together with the results of urine and blood cultures and antibiotic sensitivity were compared between the two groups.
Results: Post-TURSBP fever was recorded in 18 out of 205 patients of group A (8.8%) and in 9 out of 250 patients of group B (3.6%), a difference of significant value (p=0.018). Urine culture was positive in 14 and 5 of patients of group A and B, respectively, with extended spectrum beta lactamase producing (ESBL) Escherichia coli (E. Coli) as the most common organism. Blood culture was positive in 7 and 3 patients of group A and B, respectively, with ESBL E. Coli as the most common organism. All patients who experienced post-TRUSBP sepsis were successfully treated.
Conclusions: Adding a single IV injection of 1.5g cefuroxime to oral ciprofloxacin significantly reduces the frequency of post-TRUSBP infectious complications.

POD-04.03
Outcomes after Primary Treatment for Non-Metastasized Prostate Cancer in the European Randomized Screening Trial for Prostate Cancer (ERSPC)

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Introduction and Objective: To evaluate the effect of primary treatment for prostate cancer and possible differences by trial arm on disease-specific survival within a prostate cancer screening trial.
Materials and Methods: Five centers in the European Randomized Study of Screening for Prostate Cancer (ERSPC) provided the study population; Belgium, Finland, Sweden, Switzerland and the Netherlands. To compare the outcome by center, given treatment and randomization arm (screening vs. control arm), a Cox regression model was used to estimate hazard ratio of prostate cancer death by randomization arm adjusted for age, serum PSA, screening center, treatment and treatment year. The primary treatments evaluated included radical prostatectomy (RP), radiotherapy (RT), surveillance (SU) and hormonal therapy (HRM). Patients were classified as having low-, intermediate- or high-risk cancers but patients with metastatic prostate cancer and/or PSA > 100 were excluded from the analysis.
Results: The study population encompassed 10,888 men (6,519 in the screening arm and 4,369 in the control arm) diagnosed with prostate cancer. Among them, 328 men (167/6518 in the screening and 161/4367 in the control arm) died of the disease during a median follow-up of 5.0 years from treatment (IQR 2.7-8.1). In the high-risk group, 231/2492 (9.2%) men died of prostate cancer compared with only 36/5404 (0.7%) men in the low-risk group. In the regression analysis, no significant differences in HR were seen between the five centers, except for Belgium. The adjusted HR for death from prostate cancer for men in the high-risk group was significantly higher in the control group as compared to the screening group (HR 1.59, 95% CI 1.18 – 2.13, p=0.002). No clear differences were seen between the trial arms among the low or intermediate risk groups, however a significant difference

between the arms were seen among patients in the high-risk groups prognosis (HR 1.89, 95% CI 1.20 – 2.97, p=0.006) which seems to be explained by a skewness in risk-factors and heterogeneity between screen-detected and clinically diagnosed high-risk disease. For men in the high-risk group, a significantly increased risk of prostate cancer death was noted in men treated with radiotherapy (HR 1.84, 95% CI 1.22 – 2.78, p=0.004), and men receiving hormonal treatment (HR 3.64, 95% CI 2.25 – 5.90, p<0.001) relative to prostatectomy.
Conclusions: A large proportion of men with high-risk cancers die from PC, despite the disease being detected by screening. The choice of treatment will in both arms influence the outcome in a randomized screening study.

POD-04.04
Prevalence and Characteristics of Prostate Cancer Among Participants of Community-Based Screening in Lagos, Nigeria
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Introduction and Objective: Prostate cancer (CaP) is the most commonly diagnosed cancer among Nigerian men but CaP screening is not a common practice. The true burden of the disease in Nigeria is not known. The study was aimed at studying the community burden of CaP in Lagos.
Materials and Methods: CaP screening was carried out in the community for men aged ≥40 years in 10 local government areas of Lagos by subjecting them to serum total PSA (tPSA) test and digital rectal examination (DRE). Participants were recruited by public service announcement, flyers and radio and television jingles. Those with abnormal DRE or tPSA >95th percentile of the cohort or both were selected for transrectal biopsy of the prostate (TRPB).
Results: There were 3191 men screened and complete data was available for 3141 (98.4%). The mean age was 61.6 years. DRE was abnormal in 312 men and was significantly correlated with the age of the patient and tPSA (p<0.001). The tPSA ranged from 0 to 180μg/L with a median, mean and 95th percentile of 1.6, 2.6 and 10.0μg/L respectively. There were 207 out of the 342 men selected subjected to TRBP. Twenty-nine men had histological diagnosis of CaP, giving an estimated prevalence rate of at least 0.923% or 923 per 100,000 men of age ≥40. Only 7 (24%) had organ-confined disease while 12 (41.4%) had locally advanced disease and 10 (34.5%) men had metatatic disease. The majority of the men, 22 (75.9%) were reported to have Gleason's score of ≥7.
Conclusions: The prevalence rate of CaP among men aged ≥40 years in the community in Lagos is high and much greater than previously reported in a hospital-based study. Majority of the subjects have advanced and high-grade disease.

POD-04.05
Magnetic Resonance Imaging/ Ultrasound Fusion Guided Prostate Biopsy for Patients with Small Lesions Suspicious for Cancer Revealed by Multiparametric Magnetic Resonance Imaging
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Introduction and Objective: The accumulating evidence suggests an improved performance of MRI when modern sequences are used. Multiparametric MRI (mMRI) includes T1-and T2-weighted images, dynamic contrast, and diffusion weighting. The aim of this study was to demonstrate the efficacy of MRI/ ultrasound fusion technique for targeting small suspicious lesion for prostate cancer revealed by mMRI.
Materials and Methods: A total of 20 men with less than 10 mm suspicious lesion revealed by multimodal 3-Tesla MRI were included in this study. Half of the patients had previous history of negative conventional biopsy. The median age, PSA value and prostate volume were 70 years, 7.4 ng/ml and 33 ml, respectively. Suspicious lesions were marked on the 3-dimensional (3-D) MRI and data were transferred and fused with the 3-D volume-rendered ultrasound images by using Urostation (Koelis, France). Two samples from suspicious area as well as 6 cores from conventional sextant sites were taken transrectally.
Results: Prostate cancer was detected in 19 of 20 patients (95%). All 19 patients with positive biopsy result revealed cancer in the suspicious lesions. One patient had small suspicious lesion in the anterior apex, which may be missed by inadequate needle placement (false negative case). No significant adverse events were observed.
Conclusions: MRI-ultrasound fusion biopsy technique revealed significant potential to target small suspicious lesions on mMRI. The location of each biopsy core taken could be accurately documented in 3-D images, which seems to enable tailored planning for the treatment of small focus of prostate cancer.

POD-04.06
What Can We Do to Maximize the Detection Rates of Prostate Cancer?
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Introduction and Objective: Since Hodge introduced a revolutionary biopsy technique, "the sextant biopsy", many investigators have tried to make refinements to increase detection rates of prostate cancer, which was done mainly by increased biopsy cores. This extended biopsy scheme resulted in higher cancer detection rates; however, the reason why we need to biopsy the sites defined by each extended or saturation biopsy protocol has not been shown clearly. Here we show a subzonal cancer incidence-based transrectal biopsy strategy to maximize the detection rates of prostate cancer.
Materials and Methods: From 2000 to 2005, radical prostatectomy with no neoadjuvant therapy was performed in 254 cases in our hospital. Serial whole mount 4 mm-thick sections were reviewed to determine the subzonal incidence of prostate cancer. At the same time, we found 97% of all cases contained cancer lesions in the first two slices from the apex. So, we designed a subzonal cancer incidence-based transrectal biopsy template. In this strategy, biopsies are concentrated in the apex side. From Jan. 2006 to Dec 2011 we prospectively studied the cancer detection rates by this biopsy technique in men with suspicious prostate cancer based on an elevated PSA, digital rectal examination, and/or contrast-enhanced transrectal power Doppler ultrasound.
Results: A total of 2012 consecutive cases were biopsied. Mean patient age was 69. Median PSA was 7.3 ng/ml with a range of 0.6-4195. Prostate cancer was detected in 1167 patients (58.0%). In patients with PSA 0-4, 4-10, 10-20, and >20, cancer was detected 32.7% (48/147), 53.7% (625/1163), 57.3% (235/410), and 88.7% (259/292), respectively. In all cases, positive biopsy rate of each site was

well-correlated with subzonal incidence of prostate cancer. In PSA gray zone cases, 25.1% of cancer was diagnosed in the cores other than the sextant regions. This means that the sextant biopsy misses 25% of cancer cases.
Conclusions: Our biopsy strategy based on subzonal cancer incidence increases prostate cancer detection on initial biopsy and minimizes the potential for misdiagnosis and need for repeat biopsy.

POD-04.07
Prostate Cancer Disease Progression and Mortality after Radical Prostatectomy or External Beam Radiotherapy: Results from the ERSPC, Section Rotterdam
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Introduction and Objective: Radical prostatectomy (RP) and external beam radiotherapy (RT) are the two major curative therapeutic options for treating (clinically localized) prostate cancer (PC). No randomized studies are available that compare outcomes such as disease progression (PCProg) and/or disease specific mortality (PCmort). We aimed to compare the long term outcomes of RP and RT using observational data with adjustment for potential confounders by propensity scores.
Materials and Methods: A total of 2,173 men, all participants (screening and control arm) in the European screening trial (ERSPC, section Rotterdam) and diagnosed with PC were initially treated with RP (n= 1,248 (57.4%)) or RT (n=925 (42.6%)). PCProg and PCmort were ascertained through semiannual chart review and a cause of death committee.vCox proportional hazard analysis and competing risk analysis was used to evaluate the association of PCProg (local progression and distant metastasis) and PCmort with type of treatment. We determined the propensity to receive either RT or RP for each patient, using age at diagnosis, PSA, clinical T stage, biopsy Gleason grade, Charlson co morbidity score, year of diagnosis and study arm as covariates in a multivariable logistic regression model. The propensity score was used as a covariate of the treatment effect of RP vs RT.
Results: After a median follow-up of 8 years, 208 men suffered from PCProg and 91 died of PC. Undergoing RP resulted in less PCProg and less PCmort than RT, with hazard ratios of 0.58 (95% confidence interval 0.41-0.82) and 0.46 (0.25-0.85) respectively. Similar results were found for 1785 men with T1/T2 disease at time of diagnosis, where PCmort was less frequent (14 and 29 deaths among RP and RT men respectively).
Conclusions: Although the results point towards better outcomes with RP than RT, the observation nature of this study necessitates a careful interpretation. We adjusted for differences in observed confounders, but various other characteristics may bias the comparison, such as an inventory of subsequent treatment.

POD-04.07, Table 1.

	Radical prostatectomy (RP)	Radiotherapy (RT)
Number of PC (N of T1/T2 PC in brackets)		
Total	925 (862)	1248 (1007)
Disease progression	57 (46)	151 (80)
Death	17 (14)	74 (29)
Death other causes	338 (249)	136 (127)
Cox regression for disease progression		**Hazard Ratio RP versus RT (95%CI)**
Cox regression with propensity scores for adjustment (all PC cases)		0.58 (0.41-0.82)
Cox regression with propensity scores for adjustment (T1/T2 PC cases)		0.63 (0.41-0.96)
Cox regression for disease specific mortality		**Hazard Ratio RP versus RT (95% CI)**
Cox regression with propensity scores for adjustment (all PC cases)		0.46 (0.25-0.85)
Cox regression with propensity scores for adjustment (T1/T2 PC cases)		0.56 (0.26-1.21)

POD-04.08
Significant Risk of Prostate Cancer in Patients with Elevated PSA after Abdomino-Perineal Resection of the Rectum
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Introduction and Objective: Screening of prostate cancer in men who have undergone abdomino-perineal resection of the rectum (APR) poses a challenge for urologists. Diagnosis and staging methods are limited, as access to the prostate via digital rectal exam (DRE) is not possible. Prostate specific antigen (PSA) can be used to screen for malignancy in this population; however, the conventional diagnostic technique with transrectal ultrasound guided biopsies cannot be employed. I report my experience with transperineal ultrasound (TPUS) guided biopsy for evaluation of elevated PSA in patients who have undergone prior APR.
Materials and Methods: Records of 52 patients who underwent multiple random TPUS guided biopsy after APR between 6/91 and 3/12 were reviewed. The median serum PSA at the time of biopsy in this population was 6.6 ng/ml with range of 2.28-237 ng/ml. Twenty-two patients had undergone APR for colorectal cancer and 30 patients for benign condition. Twelve patients had received adjuvant radiation therapy for colorectal cancer.
Results: Of the 52 cases, 41 (79%) demonstrated prostate cancer. Gleason grade ≤3+3 were found in 19, 2+4-4+3 in 14, and ≥4+4 in 8 patients. Cancer was found in 20/30 patients who underwent APR for benign reason and in 20/ 22 patients who underwent APR for rectal cancer. All 12 patients who had previous radiation therapy for rectal cancer had positive biopsy. For treatment of prostate cancer after the diagnosis, radical prostatectomy in 6, external beam radiation in 9, HDR brachytherapy in 11, hormone therapy in 5, active surveillance in 1 were noted. (unknown 9 patients).
Conclusions: Significant risk of high-grade prostate cancer was found in patients with a history of APR and elevated PSA. TPUS guided biopsy can provide accurate tissue diagnosis in theses population. Diagnosis of cancer should not be delayed due to the lack of rectal access for these patients.

POD-04.09

Prostate HistoScanning for the Detection, Localization and Volume Estimation of Prostate Cancer: PHS02

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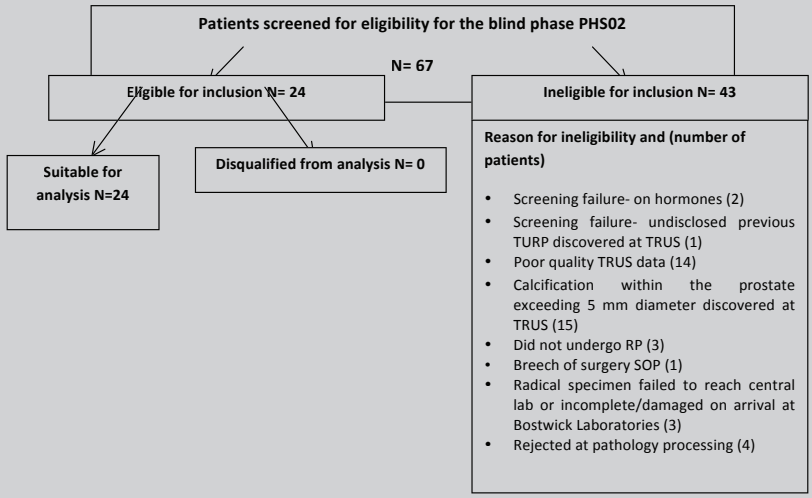
Introduction and Objective: Prostate HistoScanning uses the unprocessed ultrasound data from 3D transrectal scanning and after further processing, predicts the presence or absence of prostate cancer and the 3D location of the cancer within the gland. Initial proof of concept studies (1;2) and the open phase of this study (3) exhibited promising sensitivity and specificity of Prostate HistoScanning for detection of clinically significant prostate cancer. We report the design and recruitment to the larger, STARD compliant, European multicentre study - PHS02.
Materials and Methods: Eligible patients comprised men scheduled for radical prostatectomy and consented to the acquisition of a 3D TRUS study of the prostate prior to surgery (the index test). 3D TRUS data files underwent spectral analysis using HistoScanning software blinded to the pathology results. Radical Prostatectomy (the reference test) specimens were processed centrally at an independent laboratory to a precise standard operating procedure with whole-mount 3-4mm slices. .
Further analysis was performed in 5x5mm grid analysis of each whole-mount pathology section. Pathological processing was performed blind to the results of the HistoScanning analysis with matching between index and reference test undertaken by an independent committee. Accuracy will be calculated on detection of prostate cancer foci greater than or equal to 0.5cc and 0.2cc in volume in each of six sectors of the prostate.
Results: Number of patients screened, recruited and excluded are shown in figure 1. Results are anticipated mid-2012.
Conclusions: The results of this STARD compliant, blinded, multi-centre study of HistoScanning are awaited. Many of the methodological problems associated with testing an index test against radical prostatectomy as a reference test are pertinent to other studies seeking to evaluate the role of imaging tests in the prostate cancer diagnostic pathway.

POD-04.09, Figure 1. Recruitment to Blind Phase verification phase



Podium Session 5: Sexual Function and Dysfunction Tuesday, October 2 13:15-14:45

POD-05.01

Adipose Derived Stem Cells and Nerve Growth Factor-Incorporated Hydrogel as a Therapeutic Strategy for Post-Prostatectomy Erectile Dysfunction

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Introduction and Objective: Post-Post-prostatectomy erectile dysfunction (ED) is the major problem for patients with clinically localized prostate cancer. Recently, gene and stem cell-based therapy of the corpus cavernosum has been attempted for post-prostatectomy ED, but those therapies are limited by rapid blood flow and disruption of the normal architecture of the corpus cavernosum. In this study, we investigated the effectiveness of human adipose derived stem cell (hADSC) and nerve growth factor-incorporated hyaluronic acid-based hydrogel (NGF-hydrogel) application to regenerate damaged cavernous nerve (CN), which is the main cause of ED.
Materials and Methods: Sprague-Dawley rats inflicted with bilateral cavernous nerve (BCN) crush-injury were used for animal model. Experimental groups were divided 5 groups; normal (Nr), BCN crush-injury (C), hADSC after BCN injury (A), NGF-hydrogel after BCN injury (N), and hADSC and NGF-hydrogel after BCN injury (AN). PKH26-labeled h-ADSCs were applied around the injured cavernous nerve, and then NGF-hydrogel was immediately injected on. Four weeks after operation, erectile function was assessed by detecting the intra-cavernous pressure (ICP)/arterial pressure level by CN electrostimulation. Cavernous nerve and corpus cavernosum were collected for histological examinations.
Results: PKH-26 labeled hADSC co-localized with NGF were shown in CN tissue sections under fluorescent microscopy. In functional study, The ICP was significantly increased by application of hADSC with NGF-hydrogel compared to the other experimental groups. In histologic examination, we confirmed that hADSC/NGF-hydrogel treatment prevented smooth muscle atrophy in the corpus cavernosum by α-SMA staining. Collagen content in corpus cavernosum was increased in group C, but collagen content was minimal in the AN group. In addition, the AN group showed increased the content of eNOS-positive vessels in the corpus cavernosum.
Conclusions: This study suggests that application of hADSCs with NGF-hydrogel on the CN might be a promising treatment for post-prostatectomy ED.

POD-05.02

Priapism: A Review of 113 Cases Seen Over 25 Years at the Lagos University Teaching Hospital

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Introduction and Objective: A review of 113 patients with priapism seen over 25 years is presented.
Materials and Methods: Between January 1983 and December 2007, 113 patients with priapism were seen and treated by the Urology Unit of Lagos University Teaching Hospital. The information documented for each included age, haemoglobin genotype, drug history, associated disease, duration of priapism, modality of treatment, post-operative complications and post-therapy erectile function.
Results: The age range was 2.5-60years and the mean age 27.5 ± SD 10.93s. The mean duration of priapism before treatment was 5.02 ± SD 4.57 days and the range was 0.5 – 30 days. A total of 67 (59.3%) had a previous history of priapism while 45 (3-9.8%) had no previous history of priapism. The time of onset of priapism was at night in 80 (70.8%) patients and during the day in 17 (15%). Priapism started during the dry season in 63 (59.43%) and during the raining season in 43 (40.57%). The genotype of the patients were as follows: HBSS = 61 (54.46%); HBAS = 15 (13.39%); HBAA = 17 (15.18%); HBSC = 12 (10.71%). The genotype was not known in 6 (5.35%). Two patients had high flow priapism while others had low-flow priapism. Twenty six (23.21%) were treated conservatively while 86 (76.79%) were treated surgically. Three patients with low flow priapism developed fracture of the penis before presentation. The associated conditions were psychotropic drugs in 8, native drugs, in 6, elevated blood pressure in 5, Alcohol consumption in 4, sexual intercourse in 4, marijuana in 4, anti-hypertensive in 4, non-steroidal anti-inflammatory drugs in 3, Leukaemia in 2, prostatitis in 2, spinal bifida occulta in 2, other associated conditions – 4. The post-operative erectile function for the surgically treated patients were as follows according to their genotype AA – 50%, AS = 75%, SS = 70%, SC = 63.6%, overall 67.74%.
Conclusions: Priapism is a relatively common condition and the pattern of associated possible aetiological factors in our hospital has not changed much. Sickle cell anemia still remains the most important aetiological factor. Drug use and Drug abuse are becoming more important aetiological factors. The post-therapy erectile function varied as the genotype.

POD-05.03

Refinement of Male-To-Female Sex Reassignment Surgery Over 20 Years: Experience of 200 Cases

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Introduction and Objective: From 1992, the technique of sex reassignment surgery (SRS) has undergone some refinement, improving functional and cosmetic results. The aim of the study was to describe and assess the refinement of SRS during growing experience in 200 cases.
Materials and Methods: Between 1992 and 2012, SRS in 200 male-to-female transsexual patients was performed. The average age was 32.14 years. The average number of patients per year was 7 over the years 1992-2000 and 14 in the years 2001-2011. As a key technique, inverted penile skin flap for vaginal reconstruction was used. In the first cases the penile glans was used for cervix substitution. From 1994, clitoridoplasty using resected penile glans with dorsal neurovascular bundle including a strip of albuginea was performed. From 1997, meticulous isolation of sole neurovascular bundle was used. From 1998, anterior double Z-plasty of mons veneris reconstruction as a second stage procedure was introduced. Hair growth in skin used for preputial cover of the neoclitoris was prevented from 2000 by electrical and lately laser depilation.
Results: The average operating time of the first stage operation was 3.5 hours in the years 1992-2000 and 2 hours between 2001 and 2012. Bleeding from

urethral stump requiring secondary suture occurred in 15 patients. In 8 patients sigmoideocolpoplasty for insufficient neovaginal size was used. Clitoridal insensitivity was observed in 2 patients.
Conclusions: Growing experience with SRS enabled excellent cosmetic appearance and acceptable sexual sensation allowing vaginal intercourse and clitoridal orgasm.

POD-05.04
Outcome of Penile Prosthesis Surgery in Patients with Significant Comorbidity
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Introduction and Objective: Patients with significant comorbidity constitute the greater portion of our penile prosthesis implantation. We evaluated the outcome in those patients.
Materials and Methods: Penile prosthesis surgery (from 2000–2011) performed by a single surgeon (SK) were reviewed retrospectively. We identified the underlying systemic or local disease in all patients. Charlson comorbidity score was calculated for patients with systemic disease. Patients with local penile disorders were evaluated separately. The end point of comparison was prosthesis survival duration. One way ANOVA and descriptive statistics using Pearson Chi-square test were used.
Results: A total of 145 procedures on 92 patients were carried out; of these 40 were in 21 patients with penile pathology (peyronie's disease, ischemic priapism, paraplegia, penile reconstruction surgery and urethroplasty). The median age was 31 (22-73). Of these 15 primary insertions, 13 exchanges for infection (6), malfunction (4) and perforation (3) and 6 secondary insertions were carried out. Twenty-one procedures were uneventful (52.5%); 11 (27.5%) infections, 6(15%) removals, 1 perforation and 1 malfunction. The median duration of prosthesis survival was 679 days (8-3614). A group of 105 procedures were carried out in 71 patients who were healthy or had a systemic disease (DM, cardiovascular, renal impairment , treated cancer of the bladder or prostate). The median age was 63(29-80) yrs. Overall median prosthesis survival was 966 days (5-4332). The median Charlson comorbidity score for that group was 5. No significant difference in outcome was observed in 62 procedures in patients with a score ≥ 5 (34 uneventful and 14 infections), compared to 43 procedures in patients with a score <5 (28 uneventful and 5 infections; p= 0.6). However, patients with ≥5 score were significantly older (mean age 66.7 SD 6.4 vs. 49.6 SD 12.8 yrs; p<0.001) and had a shorter prosthesis survival (mean 994.1 SD 978 vs. 1576.6 SD 1229.9 dys; p=0.01)
Conclusions: Nearly half the penile prosthesis surgeries in patients with significant penile pathology have an uneventful outcome. Patients with significant systemic comorbidities have shorter prosthesis survival.

POD-05.05
Laparoendoscopic Single Site Assisted Transsexual Surgery with Sigmoid Neovaginoplasty for Male Pseudohermaphroditism
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Introduction and Objective: To report our initial clinical experience of laparoendoscopic single site (LESS) assisted male-to-female (MtF) genital sexual reassignment surgery (SRS) for male pseudohermaphroditism in 2 cases.
Materials and Methods: Between July and August 2010, two adolescents (17 and 16 years old) were diagnosed with male pseudohermaphroditism with perineal hypospadias and bilateral undescended testes. They were considered as girls since born because of ambiguous external genitals. Lack of menarche led to further inspection, and then chromosomes analyses confirmed to each that their genetic gender was male. But their social and psychological gender characteristics were female undoubtedly. After thorough discussion between themselves, their parents and doctors, they decided to maintain their current gender identity as girls and remove male internal genitals following vaginoplasty. After receiving the approval of local ethical committee, we performed MtF transsexual surgery with LESS assisted technique. After a 3 cm periumbilical curved incision was made, the homemade single port was inserted following resection of bilateral cryptorchidism and sigmoid vaginoplasty. Perineoplasty was performed under direct vision.
Results: LESS assisted MtF SRS were successfully performed without morbidity. Operative time for each case was 350 and 260 minutes respectively, and estimated blood loss was 200 and 100 ml respectively. Neither conversion to open or laparoscopic surgery nor blood transfusion was needed. The two patients were discharged home on postoperative day 12 and 16 respectively. The periumbilical incisions were nearly invisible 1 month postoperatively and both patients and their parents were satisfied with the good cosmetic results. Hormone therapy was under way according to endocrinologist's guidance.
Conclusions: We represented the first report of LESS assisted MtF SRS for male pseudohermaphroditism in the world. LESS assisted transsexual surgery with sigmoid neovaginoplasty was safe and feasible, and gained satisfactory cosmetic results. LESS assisted SRS might be alternative option in selected male pseudohermaphroditism patients.

Podium Session 6: Minimally Invasive Surgery
Tuesday, October 2
13:15-14:45

POD-06.01
Laparoendoscopic Single-Site Radical Cystectomy with 18 Months Follow-Up: Experience from a Chinese Center
Xu A, Li H, Zheng S, **Liu C**
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Introduction and Objective: To report our experience of laparoendoscopic single-site surgery (LESS) for radical cystectomy and bilateral pelvic lymph node dissection with 18 months follow-up.
Materials and Methods: From November 2009 to August 2011, 10 patients (9 men and 1 woman) with organ confined bladder urothelium carcinoma underwent laparoendoscopic single-site radical cystectomy (LESS-RC). For convenience of the following sigmoid neobladder construction, hypogastric midline incision was used instead of transumbilical incision. After a 3-4 cm lower abdominal midline incision was made, Quadport or homemade single multichannel port was inserted. Homemade single port was made with two rings and a surgical glove technique. Bilateral pelvic lymph node dissection and radical cystectomy were performed using prebent and conventional straight laparoscopic instruments. Then the taenia myectomy sigmoid neobladder was constructed by open procedure through the initial incision which was enlarged slightly later. Follow-up was carried out at set intervals (1, 3, 6, 12, 18, 24, 36 months).
Results: Neither conversion to open or conventional laparoscopic surgery nor extra port was needed. The operative time of LESS procedure ranged from 130 to 330 min (mean 243 min). Estimated blood loss ranged from 50 to 600 ml (mean 270 ml). 5 patients needed blood transfusion. The pathologic evaluation revealed muscle-invasive bladder urothelial carcinoma with negative margins and pelvic lymph node in all cases. No mortality or severe complications were observed perioperatively. Within mean 18 months follow-up (3 patients with more than 24 months follow-up and 5 patients with 12 months follow-up) no evidence of recurrent or metastasis was detected. Continecet was obtained in all patients during daytime after 3 months and only 2 patients need 1-2 security pads during nighttime.
Conclusions: LESS radical cystectomy was safe and technically feasible. Hypogastric midline small incision reduced distance between incision and surgical field and it was convenient. Homemade single port was cost-effective and easy to operate. Although medium-term follow-up of our study showed good cancer specific outcomes of LESS-RC, large sample study and long-term follow-up should be carried out to approve it.

POD-06.02
Hemi Salvage HIFU and Apex Sparing Salvage HIFU in Patients with Radiorecurrent Prostate Cancer: Impact on Urinary Continence: A Pilot Study
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Introduction and Objective: One-third of patients are treated with external radiation beam therapy (ERBT) for localized prostate cancer experience local recurrence, based upon PSA and biopsy. Salvage treatment options include prostatectomy, cryoablation, and high intensity focused ultrasound (HIFU). Whole gland treatment in these patients offers acceptable cancer control, but carries a risk up to 50% of urinary incontinence. HIFU is the least invasive approach, and can be tailored with millimeter precision. Hemi salvage HIFU (HSH) and Apex sparing salvage HIFU (ASSH) maintains continence and can probably offer comparable cancer control to whole gland treatment in selected candidates. The aim of this study was to evaluate the urinary function after HSH and ASSH in patients with local recurrence after ERBT.
Materials and Methods: There were 27 patients, mean age 68 (57-79) with biochemical- and biopsy proven local recurrence without distances metastases. Subgroups: Nineteen patients with unilateral cancer were treated with HSH and eight patients with negative apex biopsies were treated with ASSH. Gleason score: 6(2pts), 7a(4pts),7b(8pts), 8(10pts), 9a(1pt), 10(1pt). Three patients were on androgen depletion therapy (ADT). Pretreatment mean PSA: 5,5 ng/ml (range: 0,8-32,0). Time from ERBT to HIFU: 6-11 years. Mean follow-up time 10 months (range 1-21). MRI: 1.5T Avanto (Siemens, Erlangen) and body array coil. Sequences: ax3D T2w and DWI. Post imaging processing program: Nordic ICE®, Norway. Biopsies: 3D Accuvix V-10, Medison®, Korea, navigation and soft fusion system: Koelis®,France. Untreated margin in apex sparing group (8, 8, 9, 9, 11,12 and 17mm) was based upon ultrasound measurements of the distance between the sphincter and the positive biopsies. HIFU treatment: Ablatherm®, France. Degree of urinary continence: based on UCLA-PCI questionnaire, measured by pads needed/day.
Results: Dry (no pad) 3 months after treatment: 16/17 pts in HSH group and 7/8 pts in ASSP group.
0-1pad: 1/7 pts in ASSH and 1/16 in HSH. Two patients treated with HSH used 1pad both before and after treatment. Mean PSA at 3 months: 1,3(20 pts), 6 months: 1,2(15 pts), 9 months: 1,3(8 pts), 12 months: 2,1(6pts). Two pts are on ADT and one pt is on LHRH after treatment.
Conclusions: Hemi salvage HIFU and apex sparing salvage HIFU is beneficial in order to maintain continence compared to whole gland treatment. For appropriate patient selection, accurate and documentable biopsies are mandatory. Further prospective clinical studies are needed to validate the method and long-term cancer control.

POD-06.03
Transmesocolic Pyeloplasty: Single Centre Experience
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Introduction and Objective: Laparoscopic pyeloplasty as replaced open procedure for the treatment of UPJ Obstruction. Left-sided laparoscopic pyeloplasty requires extensive mobilization of descending colon in order to expose the UPJ. This maneuver adds to increased morbidity and duration of surgery. Identification and mobilization of UPJ through a small mesocolic window definitely decreases both of them. We present our experience with this procedure.
Materials and Methods: A total of 132 laparoscopic pyeloplasties were performed between 2004 to date. The distribution was 70 left sided vs 54 on the right side and 8 were pelvic kidneys. The age varied from 3 years to 62 years. Transmesocolic pyeloplasty was performed on 38 (40) occasions. Patients with thin mesocolon, well-identifiable pelvis and ureter thorough mesocolon, colon tucked away laterally and no major

mesocolic vessels hindering anastomosis were selected for transmesocolic procedure. Patients with a lot of fat in the mesocolon, cephaladly placed renal pelvis, associated renal calculi, over hanging colon and obstructing mesocolic vessels were done the traditional way. Standard lateral position and three-port approach was selected in all. Pelvis UPJ and upper ureter were mobilized through a mesocolic window. Lower polar vessels if encountered were transposed posteriorly. Anastomosis was performed with either 4 O or 5 O vicryl sutures. Double J stent was placed will anti grade fashion. Mesocolic rent was closed with a tube drain. Stent removal was performed three weeks postoperatively.

Results: All procedures were uneventful. Transmesocolic anastomosis was possible in 38 of 40 cases attempted. Conversion into the traditional way was required in two cases in view of difficulty encountered with mesocolic vessels. One patient required re-positioning of DJ stent ureteroscopically. One patient required re-insertion of DJ stent two months postoperatively for obstructed drainage. Duration of procedure in transmesocolic pyeloplasty was shorter by an average of 35 minutes when compared to the traditional way. Duration of postoperative ileus was much shorter.

Conclusions: Transmesocolic pyeloplasty is an excellent procedure to correct left sided UPJ obstruction in selected cases. It significantly decreases the operating time and morbidity. It is quite safe in selected cases and expert hands.

POD-06.04

Robotic Assisted Partial Nephrectomy in Patients without Hilar Clamping: A Multi-Institutional Study

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Introduction and Objective: Ongoing efforts are focused on minimizing or eliminating renal ischemia during robot-assisted partial nephrectomy (RPN). We evaluate the outcomes of RPN without hilar clamping using data from a large multi-center series.

Materials and Methods: We performed a multi-institutional analysis of prospectively maintained databases of RPN performed by high-volume surgeons across 5 academic institutions. Our series combined operative data of 886 RPN collected between 2007 and 2011. A total of 66 patients who underwent RPN without hilar clamping were identified and retrospectively analyzed. Patient demographics, perioperative, functional, and early oncological outcomes of RPN without hilar clamping were assessed.

Results: Mean patient age was 60 years (18-88). Mean Charlson Comorbidity Index was 3.5 (SD=1.99) and mean ASA score was 2.5 (SD=0.68). Mean tumor size was 2.5 cm (range 0.7-11) and eight patients (12%) had tumors over 4cm in size. Mean nephrometry score was 5.3 (range 4-10) with 30 tumors (45%) >50% exophytic and 45 (68%) tumors in a polar location. Indications for an off-clamp approach included eGFR≤60 in 13 patients (20%), solitary kidney in 4 patients (6%), and multiple or bilateral tumors in 2 patients (3%). Perioperative outcomes included a median blood loss of 150 ml (IQR 50-300), mean operative time 157min (range 59-267), and hospital stay of 2 days (SD 1.8). There were no intraoperative complications. There were 8 postoperative Clavien I-II complications (12%) but no Clavien III-V complications. Preoperative mean eGFR was 81 (20-119). The mean postoperative change in eGFR was 0.4% and no patients required dialysis. Positive surgical margins occurred in two patients (3%). There were no disease recurrences at a mean follow-up of 21 months.

Conclusions: Off-clamp RPN is safe and feasible in appropriately selected patients and with surgeon experience. Off-clamp RPN may help optimize renal function by eliminating renal ischemia. This represents the largest multi-institutional series in the literature regarding off-clamp RPN.

POD-06.05

Obturator Nerve Bloc to Prevent Adductor Contraction in Transurethral Bladder Surgery: The Suprapubic Technique

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Introduction and Objective: To evaluate the efficacy of a new technique of suprapubic obturator nerve block (ONB) in the prevention of obturator nerve reflex and leg jerking during transurethral resection of bladder tumors (TURBT) to prevent the risk of serious complications such as bladder wall perforation, vessel laceration, incomplete tumor resection and obturator hematomas.

Materials and Methods: From a total of 187 patients with bladder tumors who underwent TURBT under spinal anesthesia, using monopolar cautery, between April 2009 and October 2011, 134 presented violent adductor muscle spasms during resection and were managed by a suprapubic ONB with the injection of 2% lidocaine. The site of injection was located between the upper edge of the pubic spine, the outer edge of the rectus muscle of the abdomen and the iliac vessels located by external pulses. There was 7 to 10 ml of 2% lidocaine injected slowly through a needle inclined caudally at 30° to the abdominal wall with a completely empty urinary bladder to avoid bladder puncture and extravesical dissemination of tumoral cells. After 4 to 6 minutes to have the motor ONB installed, the TURB was than continued. The incidence of leg jerking was registered.

Results: From a total of 134 patients who presented violent leg jerking during TURBT in our series, the suprapubic ONB with 2% lidocaine was effective in 129 cases (96.26%). In the five failures of the suprapubic ONB, TURBT was incomplete in two cases because of the high volume of the tumors and the obturator jerk reflex during the procedure. No case of bladder wall perforation or pelvic hematoma was deplored.

Conclusions: Local blockade of the obturator nerve via a suprapubic way is an effective method to avoid its stimulation during TURBT. It can be performed easily, and we did not experience any serious complication. Compared to other methods of local ONB (transvesical, transperineal), our technique allows blockade of the obturator nerve before its bifurcation and preserve the integrity of the bladder wall.

POD-06.06

Pure Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES) for Nephrectomy: Report of 10 Cases

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Introduction and Objective: To describe the initial clinical experience of pure transvaginal NOTES for

nephrectomy, and evaluate its feasibility.
Materials and Methods: Between January and December 2011, nine female patients with non-function kidney (right 7, left 2), with a median age of 40.5 yeas (range 32 to 68), underwent pure transvaginal NOTES nephrectomy, and one female patient with right renal carcinoma underwent pure transvaginal NOTES radical nephrectomy. After induction of general anesthesia, the patients were positioned in lithotomy with ipsilateral lumbar at 30° angle to the operating table. The patient's head end was lowered by 25° in order to keep the intestinal canal out of the pelvic cavity as possible. A 5-mm incision was made at the posterior vaginal fornix, and a 5mm Trocar was introduced into the pelvic cavity guided by a 5-mm forceps. A 5-mm flexible-tip 0° laparoscope was inserted into the pelvic cavity confirming no rectum injury. Then a Triport was introduced at the posterior vaginal fornix. The patients head end was raised by 25° with right lumbar at 60° angle to the floor. Dissection was performed according to the method of the standard laparoscopic simple and radical nephrectomy. The intact specimen was extracted transvaginally. The pelvic cavity was drained by one tube brought out through vagina. The vaginal wound was closed under direct vision using a 2/0 absorbable suture.
Results All the procedures were successfully completed. The median operative time was 200mins (range 170 to 330). The median estimated blood loss was 160 ml (range 100 to 250). There were no intraoperative or postoperative complications. The patients resumed ambulation on postoperative day 1. The patients resumed nutrition and the pelvic drainage was removed on postoperative day 2 to 3. The patients were discharged on postoperative day 6.
Conclusions: Pure transvaginal NOTES for nephrectomy is feasible. This novel technique seeks to provide cosmetic result even when compared to today's minimally invasive procedures.

POD-06.07
Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES) Nephrectomy: Our Experience
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Introduction and Objective: The feasibility of hybrid transvaginal natural orifice transluminal endoscopic surgery nephrectomy (HTNN) has already been demonstrated. However, pure transvaginal NOTES nephrectomy (PTNN) has been limited to animal experiments with only one report of its use in humans. We will describe our initial experience with the HTNN and stepwise transition toward PTNN in female patients.
Materials and Methods: Between May 2010 and January 2011, 40 HTNNs and 2 PTNNs were performed in 42 patients in our center. In our initial 33 procedures, HTNNs were performed using a conventional 10-mm 30° laparoscope by vaginal access and the assistance of two additional umbilical trocars. In the subsequent 4 procedures, a 5-mm 0° flexible laparoscope was introduced through a umbilicial trocar and a TriPort was inserted through a transvaginal incision. In the latter 3 procedures, all the laparoscopic instruments were introduced through the transvaginal TriPort. However, the 3 procedures were aborted due to the limitation of the length of laparoscopic intruments. Transient umbilical assistance was necessary at the end of the procedures. In the last 2 procedures, two successful PTNN were performed using the extra-long curved laproscopic intruments. The standard laparoscopic transperitoneal nephrectomy technique was performed. The intact specimen was extracted transvaginally.
Results: Thirty-nine HTNNs and 2 PTNNs clinical cases were successfully accomplished. One patient with right renal carcinoma, who underwent HTNN, was converted to open surgical approach because of uncontrolled bleeding for injury of the inferior vena cava. The mean operative time was 143 minutes (range 100 to 260). The mean estimated blood loss was 180 mL (range 50 to 600). The mean time for patients to resume full ambulation and oral diet was 1.2 days (range 1 to 2) and 2.4 days (range 2 to 3), respectively, and the mean postoperative hospitalization stay was 7.4 days (range 4 to 10).
Conclusions: HTNN is a feasible and safe surgical option for both benign and malignant diseases of the kidney in appropriate female patients. PTNN is technically challenging but may be feasibly and safely performed. Existing instruments need improving for the development of HTNN or PTNN.

Podium Session 7: Kidney Cancer
Tuesday, October 2
15:15-16:45

POD-07.01

Partial Nephrectomy for Tumors Over 4 cms: Oncological, Clinical Outcomes and Assessment of Complication Using a Graded Score

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Introduction and Objective: The role of nephron-sparing surgery (NSS) is well established for T1a renal lesions (<4 cm). Renal tumor control achieved by NSS is equivalent to one achieved by Radical Nephrectomy (RN) in appropriately selected patients, offering the benefits of decreased renal insufficiency rate when compared to RN. Recent data for renal tumors > 4 cms have suggested that it might be possible to expand the indication of NSS, with comparable oncological and clinical outcomes. However, NSS for tumors > 4 cms has been associated with a slightly higher rate of complications. The objective is to evaluate the oncological and clinical outcomes of NSS for renal tumor > 4 cms and to assess the complications based in a graded, validated and reproducible scoring system (Clavien score).
Materials and Methods: After the approval of the institutional ethic board, we retrospectively identified 214 patients who underwent NSS for renal tumors. Thirty-nine patients had tumors over 4 cms. The study period was from 2002 to 2009. Patients with metastasis at the time of diagnosis, follow-up less than 6 months or with non sporadic tumors were excluded from the study. Continues and categorical variable were assessed with Mann-Whitney U test and chi-square test, respectively. Kaplan-Meier analysis was used to calculate the overall survival and cancer specific survival rate. The assessment of the complication was done using the Clavien score.
Results: Forty-five tumors were identified in 39 patients. The median age was 61 years ± 1.7. Median tumor size was 5.2 cms. The surgical indication was imperative in 7 patients (solitary kidney or contralateral atrophic kidney) and elective in 32 (82%). The final pathology report showed that 34 (81.2%) and 5 (18.2%) tumors were malignant and benign, respectively. After a mean follow-up of 35.8 months (median 34 months), the overall survival rate was 89.7% while none had died from renal tumors. Tumor recurrence was detected in 2 patients (5.9%). There were 18 complications in 14 patients (35.9%) and most of these complications were grade 1-2 (61.1%).
Conclusions: NSS for tumors >4 cm is surgically feasible and has a good oncological outcome. Assessment of the perioperative complications with the Clavien grading system showed that most of these events are minor in severity (Grade 1-2).
Funding: None

POD-07.02

Open and Robotic Nephron-Sparing Surgery for T1b or Greater Renal Cell Carcinoma

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Introduction and Objective: Nephron-sparing surgery for renal cell carcinoma (RCC) with tumor size greater than 4 cm (T1b) is prevalent. Outcome data on robotic (RPN) versus open partial nephrectomy (OPN) has been reported. We report a single surgeon experience with RPN and OPN for T1b or greater RCC.
Materials and Methods: Patients undergoing RPN and OPN for T1b or greater RCC between 2007 and 2012 are included. Demographics, operative, perioperative, complications, and recurrence data were prospectively collected and analyzed.
Results: Fifty-nine patients underwent partial nephrectomy for T1b or greater RCC. Twenty-one of these patients underwent RPN and 38 patients underwent OPN. Patient demographics, ASA, and BMI were similar for both groups. The average tumor size for the RPN and OPN group was 5.8 and 5.7 cm respectively. The two groups had a comparable mean operative times (RPN 152 minutes, OPN 158 minutes, p=0.18). The average warm ischemia time for the RPN group was 27 minutes. Seventeen OPN cases were performed without hilar clamping and 21 cases required cold ischemia time with the average hilar clamping time of 25 minutes. Estimated blood loss for both groups was comparable (RPN 347 cc, OPN 289 cc) with a 21% transfusion rate. Length of stay (LOS) for RPN was significantly shorter than the OPN (2.5 days vs 5.3 days p=0.003). There was no significant change in the preoperative, postoperative, and 3 month calculated GFR. RPN and OPN had similar complication rates. RPN had 2 cases of prolonged urine leak. OPN had 7 complications. Four cases of prolonged urine leak requiring stents, 2 wound infections requiring negative pressure dressing, and 1 arteriovenous malformation requiring angioembolization. At average follow up of 24 months, there were no cases of local recurrence. One patient in the open group developed metastatic disease 18 months post-surgery.
Conclusions: OPN and RPN are efficacious treatments for T1b or greater RCC with acceptable morbidity and recurrence risk in short term follow-up. Minimally invasive approach may lead to a shorter LOS and earlier convalescence. Larger studies with longer follow up are needed to support these early observations.

POD-07.03

External Validation and Comparison of Prognostic Models for Renal Cell Carcinoma Recurrence in a Japanese Population

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Introduction and Objective: The aim of the present study is to compare the accuracy of three prognostic models in predicting recurrence-free survival among Japanese patients who underwent nephrectomy for non-metastatic renal cell carcinoma (RCC).
Materials and Methods: Patients originated from two centers: Chiba University Hospital (n = 152) and Chiba Cancer Center (n = 65). The following data were collected: age, sex, clinical presentation, Eastern Cooperative Oncology Group performance status, surgical technique, 1997 tumor–node–metastasis stage, clinical and pathological tumor size, histological subtype, disease recurrence, and progression. Three western models, including Yaycioglu's model, Cindolo's model and Kattan's nomogram, were used to predict recurrence-free survival. We externally validated the predictive accuracy of these models, which was assessed using the Harrell's concordance-index.
Results: The concordance-indexes were 0.795 and 0.745 for Kattan's nomogram,

POD-07.03, Table 1. The concordance indexes

Models	Concordance-index (95% CI)	
	Chiba University Hospital	Chiba Cancer Center
Yaycioglu	0.70 (0.59–0.81)	0.63 (0.49–0.77)
Cindolo	0.70 (0.59–0.81)	0.63 (0.49–0.77)
Kattan	0.80 (0.71–0.88)	0.75 (0.62–0.88)

0.700 and 0.634 for Yaycioglu's model, and 0.700 and 0.634 for Cindolo's model, respectively (Table 1). The comparison of the c-index values at each institution showed a statistically significant difference between Kattan's nomogram and the other mathematical models ($p < 0.05$). On the other hand, the c-index values were not significantly different between Yaycioglu's model and Cindolo's model. Furthermore, we confirmed that the constructed calibration plots of Kattan's nomogram overestimated the predicted probability of recurrence-free survival after 5 years compared with the actual probability.

Conclusions: While the current prognostic models for patients treated with nephrectomy for non-metastatic RCC were developed and validated based entirely on Western populations, there were no established prognostic models for Japanese patients. As a result, when we investigated the general applicability of the models for Japanese patients, Kattan's nomogram was a powerful decision-making aid for Japanese patients under certain cautious condition.

POD-07.04

Long-Term Outcome of Surgical Resection for Local Recurrence Following Radical Nephrectomy

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Introduction and Objective: Isolated local recurrence of renal cell carcinoma (RCC) is a rare occurrence. Maximal resection of the recurring lesion is considered to be a feasible treatment. To characterize the long-term outcome of surgical extirpation for local recurrence after radical nephrectomy of RCC and identify prognostic factors for locally recurrent RCC.

Materials and Methods: Peking University First Hospital Urologic database was queried for all patients with isolated local recurrence following radical nephrectomy for localized RCC. According to previous literature, local recurrence included relapse in the renal fossa, ipsilateral adrenal gland and ipsilateral retroperitoneal lymph nodes. Univariate and multivariate analyses of prognostic factors, including Fuhrman nuclear grade, tumor stage, primary tumor size, recurrence time and recurrence tumor size, on cancer specific survival rate were performed. Median follow-up was 62 months. All the data were analysed by SPSS19.0. Cancer-specific survival and relapse patterns were estimated using the Kaplan–Meier method.

Results: In our institutional database,1045 patients were treated with nephrectomy for localized RCC from 1994 to 2011. With a median postoperative follow-up of 62 months(range 12-119), 15 patients (1.44%) experienced local recurrence, 9 of which were managed by surgical resection, the remaining 6 did not receive an operation. Patients received surgical resection had a 1-year cancer specific survival rate of 87%, compared to 60% of the patients without receiving surgical treatment. Four-year cancer specific survival rate is 72% versus 30%.The median survival time is 60 months versus 37 months. The recurrence interval is 22.4 months versus 37.1 months. The correlation analysis indicated that recurrence interval has positive correlation with Fuhrman nuclear grade of primary renal tumor ($P<0.05$) and primary tumor stage ($p<0.05$). There was significantly positive correlation among death and recurrent tumor size ($p<0.05$).

Conclusions: Surgical resection for local recurrence of RCC in selected patients is a feasible management and may prolong the survival time. Fuhrman nuclear grade and tumor stage of primary renal tumor may have prognostic potential for tumor relapse.

POD-07.05

Results of a National Population-based Study of Outcomes of Surgery for Renal Tumours Associated with Inferior Vena Cava Thrombus

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Introduction and Objective: In several major surgical procedures, an association with provider volume and outcomes has been seen, justifying a centralization of these procedures. Radical nephrectomy with removal of inferior vena cava (IVC) thrombus is a rare, but large and complex operation in urology. Using Canada-wide population based data, we determined to assess whether surgeon or hospital volume had an effect on in-hospital mortality or complications.

Materials and Methods: The Canadian Institute for Health Information(CIHI) administrative codes were used to identify all nephrectomies associated with an IVC thrombus performed in 9/10 provinces from 1998-2007. The CIHI discharge abstract database was used to determine in hospital mortality and complications for the hospital admission at time of surgery. Multivariate logistic regression analysis (MVA) was performed to assess the impact of surgeon and hospital volume on in-hospital mortality and complications, adjusting for age, sex, co-morbidity (using modified Charlson score), year of surgery, and region.

Results: During the study period, 816 radical nephrectomies associated with venous thrombus were performed on 521 men and 295 women. The in-hospital mortality rate was 7%. Median length of stay was 10 days. Complications were noted in 633 patients (78%). Fifty-eight cases had cardiac bypass associated cases, and these had significantly higher in-hospital mortality (16%, $p=0.01$) and complications (93%, $p=0.001$). Age, co-morbidity and use of cardiac bypass were the strongest predictors of in hospital mortality on MVA. MVA showed a non-significant trend to lower in-hospital mortality with higher surgeon and hospital volume. The effect of hospital and surgeon volume on all and surgical specific complications was mixed.

Conclusions: Radical nephrectomy with associated IVC thrombus is a rare and

complex urologic procedure with significant complications and mortality. Age, comorbidities and cardiac associated cases were the strongest predictors of early outcomes, while surgeon and hospital volume were not significant predictors.

POD-07.06

Impact of Maximum Standardized Uptake Value (SUVmax) Evaluated by 18-Fluoro-2-deoxy-D-glucose Positron Emission Tomography / Computed Tomography (18F-FDG-PET/CT) on Survival for Patients with Advanced Renal Cell Carcinoma

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Introduction and Objective: In this era of molecular targeting therapy when various systematic treatments can be selected, prognostic biomarkers are required for the purpose of risk-directed therapy selection. Numerous reports of various malignancies have revealed that 18-Fluoro-2-deoxy-D-glucose (^{18}F-FDG) accumulation, as evaluated by positron emission tomography, can be used to predict the prognosis of patients. The purpose of this study was to evaluate the impact of the maximum standardized uptake value (SUVmax) from 18-fluoro-2-deoxy-D-glucose positron emission tomography/computed tomography (^{18}F-FDG PET/CT) on survival for patients with advanced renal cell carcinoma (RCC).
Materials and Methods: A total of 67 patients with advanced or metastatic RCC were enrolled in this study. The FDG uptake of all RCC lesions diagnosed by conventional CT was evaluated by ^{18}F-FDG PET/CT. The impact of SUVmax on patient survival was analyzed prospectively.
Results: The mean duration of observation was 461 days (range, 7-1229 days). The SUVmax before treatment of 67 patients ranged between undetectable level and 16.6 (mean 7.6±3.6). The patients with RCC showing high SUVmax before treatment demonstrated poor prognosis (P<0.001 hazard ratio 1.289, 95% CI 1.161-1.430). The median survival time of 36 patients with RCC showing SUVmax less than 7.0 was 1229±991 days, that of 21 patients with RCC showing SUVmax between 7.0 and 12.0 was 446±202 days, and that of 10 patients RCC showing SUVmax higher than 12.0 was 95±43 days (<7.0 vs. 7.0< <12.0 P=0.0052, 7.0< <12.0 vs. 12.0<:P=0.0169, log-rank test). SUVmax demonstrated a tendency to predict the survival compared with the Memorial Sloan-Kettering Cancer Center classification (P =0.015 vs 0.315, multivariate Cox analyses).
Conclusions: The survival of patients with advanced RCC can be predicted by evaluating their SUVmax using ^{18}F-FDG-PET/CT. ^{18}F-FDG-PET/CT has potency as an "imaging biomarker" to provide helpful information for the clinical decision-making.

POD-07.07

The Limited Value of Upper-Tract Urine Cytology for the Diagnosis of Upper Tract Urothelial Carcinoma

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Introduction and Objective: We evaluated the diagnostic efficacy of voided urine cytology (VC), retrograde pyeography (RP), upper-tract urine cytology (UTC), and multidetector computed tomography (MDCT) in the patients with upper tract urothelial carcinoma (UTUC) treated surgically.
Materials and Methods: Between January 2003 and April 2010, 99 patients (73 male, 26 female) underwent radical nephroureterectomy for UTUC. All of them received preoperative VC, RP, UTC, and MDCT examination. We retrospectively evaluated the diagnostic accuracy and detection rate of UTUC using these diagnostic tools.
Results: The patients with pelvic cancer were 56.5% and with ureteral cancer were 43.5%, respectively. On final pathology, 31.3% of patients had non-muscle invasive disease (pTa, pT1) and 68.7% had invasive disease (≧pT2). Low-grade and high-grade cancers were present in 25.3% and 74.7% of patients, respectively. Sixteen patients (16.2%) had positive VC before RP. On RP, abnormal findings which were filling defects, ureteral strictures, and/or hydronephrosis were observed in 90 patients (90.9%), and positive UTC during RP examination was found in 48 patients (48.5%). On MDCT, tumor foci of UTUC could be detected in 90 patients (90.1%) and 7 patients (7.7%) had only abnormal signs of wall thickening and/or hydronephrosis. On MDCT, 2 patients had no remarkable finding on upper urinary tract which proved to be non-papillary tumor and carcinoma *in situ* in postoperative pathological examination, but they had positive VC. We then evaluated the performance of diagnostic accuracy using VC, RP, UTC, and MDCT examination. The false negative rate for the detection of UTUC was 6.1% using VC, RP, and UTC examination. In contrast no false negative case was observed using VC in combination with MDCT examination.
Conclusions: Our results indicated UTC had limited value of diagnosis of UTUC because only half of the cases had positive UTC. The combination examination of VC and MDCT is essential to identify UTUC preoperatively.

POD-07.08

Safety and Efficacy of Sorafenib in Japanese Patients with Renal Cell Carcinoma under Daily Medical Practice: Result from the Post-Marketing All-Patient Surveillance with >3200 Cases

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Introduction and Objective: We report results of the safety and efficacy of sorafenib for the treatment of Japanese patients with RCC under daily medical practice.
Materials and Methods: All Japanese patients with RCC who started treatment with sorafenib between Jan 2008 and Sep 2009 were enrolled in surveillance. Treatment status, metastasis, tumor assessment (at 1, 3, 6, 9 and 12 months), patient outcome, laboratory tests, and adverse events (AE) were monitored for 12 months after starting treatment.
Results: As of the interim cutoff date Jul 2011, 2407 and 2345 patients were evaluable for safety and efficacy, respectively. Patient backgrounds were; male (76%), median age 67, ECOG-PS 0 or 1 (94%), TNM stage IV (98%), prior surgery (83%), prior systemic/cytokine therapy (80/77%), clear cell histology (69%), metastasis

(98%) including lung (71%), lung only (26%) and bone (32%), MSKCC risk 1999: low 16%; intermediate 58%; high 5%; unknown 21%. Starting daily dose was 800 mg in 80%. Median duration of therapy and average daily dose were 5.6 months and 525mg, respectively. Discontinuation due to AE occurred in 40%, with hand-foot skin reaction (HFSR) as the most common reason. The most common adverse drug reactions (ADRs) were HFSR (57%), hypertension (34%), diarrhea (19%), alopecia (17%), blood amylase increased (14%), rash (14%), hepatic function abnormal (11%). Timing of onset of ADRs was predominantly within 1 month of starting sorafenib with the exception of diarrhea. The response rate (based on the Japanese Urological Association's rules) was 24%, while the disease control rate including no change was 76%. Median of time to response and duration of response were 53 days and 171 days, respectively. Median PFS was 197 days [95% CI: 188-208 days], and median OS was not reached. OS at 12 months was 69% [95% CI: 66-71%]. Eighty-one percent of patients with lung only metastasis (n=606) and 64% of all other patients (n=1687) were alive at one year.

Conclusions: Sorafenib showed manageable safety profile and favorable efficacy in Japanese patients with advanced RCC under daily medical practice. Final data with approximately 3200 patients will be presented.

POD-07.09

Underexpression of Tumor Suppressor LKB1 in Clear Cell Renal Cell Carcinoma is Common and Confers Growth Advantage in vitro and in vivo

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Introduction and Objective: Accumulating evidence suggests that deregulation of energy-sensing pathways, a common feature of several hamartoma syndromes, closely associates with renal cell carcinoma (RCC) development. The metabolic regulation that coordinates the energy demands of a cancer cell with its energy-consuming malignant phenotype is largely controlled by AMPK via regulation of mTOR. Here we demonstrate that, reminiscent of Peutz-Jeghers hamartoma syndrome, most sporadic cases of clear cell RCC (ccRCC) underexpress liver kinase B1 (LKB1), the master regulator of AMPK.

Results: At the transcript level, 10 out of 10 ccRCC patients had reduced expression of LKB1 in their tumor tissue as compared to the normal surrounding renal parenchyma. At the protein level, image analysis of a tissue microarray of 201 ccRCC and 26 normal renal tissues stained for LKB1 revealed a significant reduction in LKB1 expression in the tumor tissues. *In vitro*, lentiviral particle-mediated knockdown of LKB1 in human RCC cells (shLKB1) resulted in reduced AMPK signaling, increased cellular proliferation, invasion, migration and VEGF secretion compared to cells stably expressing control vector (shControl). *In vivo*, the take rate and growth of shLKB1 RCC xenografts in nude mice was significantly higher than shControl xenografts.

Conclusions: Collectively, these results indicate for the first time that LKB1 acts as a tumor suppressor in ccRCC and that loss of LKB1 expression is a common event in the disease.

Podium Session 8: Prostate Cancer Therapy
Tuesday, October 2
15:15-16:45

POD-08.01
Is Histopathology and Risk of Biochemical Failure Negatively Affected in Patients Eventually Undergoing Radical Prostatectomy Following Initial Active Surveillance?
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Introduction and Objective: Active surveillance (AS) remains controversial as an initial strategy for low-risk prostate cancer (PCa). In this study we **A)** investigated the probability of remaining on AS, and **B)** compared the outcome in terms of final histopathology in low-risk patients who underwent radical prostatectomy after initial AS with a population of matched patients undergoing immediate RP after diagnosis.
Materials and Methods: There were 353 patients with biopsy Gleason score (bGS) ≤ 6, PSA < 10 and cT ≤ 2b diagnosed in the period 1st January 2001 – 31st December 2011 included. There were 201 patients initially followed on AS. There were 152 patients, matched to the AS patients by age, PSA, bGS, and cT-category at diagnosis, who underwent RP immediately following diagnosis (the immediate RP cohort).
Results: A: After a median follow-up of 21 months, 32% (64/201) on AS left the protocolled programme. There were 53 who met specified progression criteria and 11 left by own preference. The 5-year Kaplan-Meier estimated probability of remaining on AS was 56.7% (95% CI: 47.5;65.9). There were 56 patients who failed AS who underwent RP (the AS-RP cohort). The median time to RP was 14.5 months after entry in AS. Two years after entry in AS, 21% (42/201) had undergone RP. **B:** No statistically-significant difference between the AS-RP and immediate RP cohorts' final histopathology were found. ≥ pT3 cancer was found in 11.2% of the immediate RP cohort vs. 19.7% in the AS-RP cohort. bGS was upgraded to ≥ 7 in the RP specimen in 48.7% and 58.9%, respectively.
Conclusions: One in five patients with localized low-risk PCa who initially were followed in AS underwent RP within 2 years. Their histopathology is of concern but comparable to that of matched patients who underwent immediate RP. However, this indirectly indicates that patients remaining on AS harbor tumors of similar characteristics. Acknowledging the lack of randomization and the consequent limitations of our study, our data strengthens the need for further studies to clarify the role of AS in the management of low-risk PCa.

POD-08.02
Positive Surgical Margins in Radical Prostatectomy for Localized Prostate Cancer: Is the Risk Increased by Nerve-Sparing Surgery?
Roder M[1], Thomsen F[1], Christensen I[3], Toft B[2], Berg K[1], Gruschy L[1], Vainer B[2], Brasso K[1], Iversen P[1]
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Introduction and Objective: A proper performed radical prostatectomy (RP) ensures complete surgical removal of intraprostatic cancer tissue. Nerve-sparing (NS) technique is used to reduce the risk of erectile dysfunction. A positive surgical margin (PSM) is defined as the presence of tumor cells at the inked margin of resection in RP specimens. In principle, NS surgery will not increase the risk of PSM in truly organ confined prostate cancer (PCa). We have investigated how NS surgery affects the risk of PSM in a large cohort of patients with clinically localized PCa.
Materials and Methods: The study includes 1148 consecutive patients who underwent RP from 2006 to 2011. Patients and pathology specimens were handled according to standard protocols. Patients selected for NS surgery had biopsy Gleason score ≤3+4, T1-cT2a/b, PSA<10 ng/ml and no positive apical biopsies. The location of PSM were categorized as apical (PSMs found exclusively at the apex) or non-apical (PSM found at all other locations). The primary endpoint of the study was to assess the impact of NS surgery on the odds for PSM.
Results: The overall PSM rate in all patients (NS + non-NS) was 31.4%. Reflecting criteria for NS, significant differences in PSA, biopsy Gleason score, and cT-category were found in favor of the nerve-spared patients. In multivariate analysis, the odds of having PSM depended on cT-category, PSA, percent positive cores of PCa in biopsies, and NS surgery. NS surgery independently increased the odds for PSM with 50% (odds ratio= 1.5, 95% CI: 1-2.1; p=0.03) compared to wide resection. NS surgery had no impact on the location of PSM. Robotic prostatectomy increased the odds for non-apical PSMs with 60%.
Conclusions: Both preoperative and surgical parameters affect the odds of having PSM after RP. It is of concern, that patients who undergo NS surgery during RP have at least the same or increased odds of PSM compared wide resection, even though they are carefully selected based on clinical, histopathological and biochemical parameters before surgery.

POD-08.03
Outcome Following Surveillance of Men with Screen-Detected Prostate Cancer: Results from the Göteborg Randomized Population-Based Prostate Cancer Screening Trial
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Introduction and Objective: Overdiagnosis and risk of over-treatment is a major drawback in screening for prostate-cancer. One strategy to avoid unnecessary over-treatment is managing patients with surveillance until signs of progression. This study was undertaken to assess outcomes following surveillance (S) of men with screen-detected prostate cancer (PC).
Materials and Methods: Of the 968 men who were diagnosed with screen-detected PC between 1995 and 2010 in the Göteborg randomized population-based prostate cancer screening trial, 439 were managed with S and were included in this study. They were followed at intervals of 3-12 months and were recommended to switch to deferred active treatment in case of a progression in PSA, grade or stage. Tumors were divided into risk groups (lowlow, low, intermediate, high and advanced) to investigate whether failure after S (PC death, progression to M1, initiation of hormonal therapy or PSA recurrence after radical prostatectomy and/or radiation therapy) was associated with risk group and/or age at diagnosis.
Results: Forty-five percent of all screen-detected PC were managed with S and lowlow-risk and low-risk PC constituted 60% of all screen-detected PC. Median age at diagnosis was 65.4 years and median follow-up was 6.0 years from diagnosis. Thirty-seven percent (162/439)

switched from S to deferred active treatment and 39 men failed surveillance. The 10-year treatment-free and failure-free survival figures were 45.4% and 86.4% respectively. Men with low-risk and intermediate + high-risk tumours had a hazard ratio for failure of 2.1 (p = 0.09) and 3.6 (p <0.001) respectively, compared to lowlow-risk tumors.
Conclusions: A large proportion of men with screen-detected PC can be managed with S. Surveillance appears safe for men with low-risk PC and may also be an alternative for selected men with intermediate-risk PC.

POD-08.04
Comparison of Preoperative and Real-Time Intraoperative Planning in 125I Permanent Prostate Brachytherapy: Long-Term Clinical Biochemical Outcome
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Introduction and Objective: To evaluate the long-term clinical outcome through biochemical no evidence of disease (bNED) rates among men with low to intermediate risk prostate cancer treated with two different ^{125}I brachytherapy implant techniques: preoperative planning (PP) and real-time intraoperative planning (IoP).
Materials and Methods: From June 1998 to July 2011, 1176 men underwent transperineal ultrasound-guided prostate brachytherapy using either PP (132) or IoP (1044) for clinical T1c-T2b adenocarcinoma of the prostate Gleason less than 8 and PSA less than 20 ng/ml. Men with Gleason 7 disease were treated by combination therapy of brachytherapy, external beam radiation therapy and 6-month androgen deprivation therapy (ADT). Median age was 67 years and the median follow-up was 83 months for the PP group and 47 for the IoP one. Biochemical failure was determined according to the Phoenix definition.
Results: The 5- and 10-year actuarial biochemical control rate was 95% and 85% respectively. The 10-year actuarial biochemical control was 59% for patients treated by PP technique and 95% for those treated with the IoP technique ($P < 0.001$). Comparing the 10-year bNED rates for the brachytherapy-monotherapy group, given to lower risk patients yielded 60% for the PP group and 94% for the IoP group ($P < 0.001$). Multivariate Cox regression analyses identified, implant technique or D90, ADT and PSA as independent prognostic factors for biochemical failure.
Conclusions: Following our previous published results addressing the limited and disappointing outcomes of PP method when compared to IoP based on CT dosimetry and PSA kinetics, we now confirm the long-term clinical, PSA based bNED rates clear cut superiority of IoP implant methodology. In our practice the dynamic real time calculations result in an ideal dose distribution within the target volume and translate to excellent clinical outcome.

POD-08.05
Active Surveillance for Patients with Low-Risk Prostate Cancer: How Does PSA Doubling Time Affect the Risk of Histo-Pathological Progression at Re-Biopsy?
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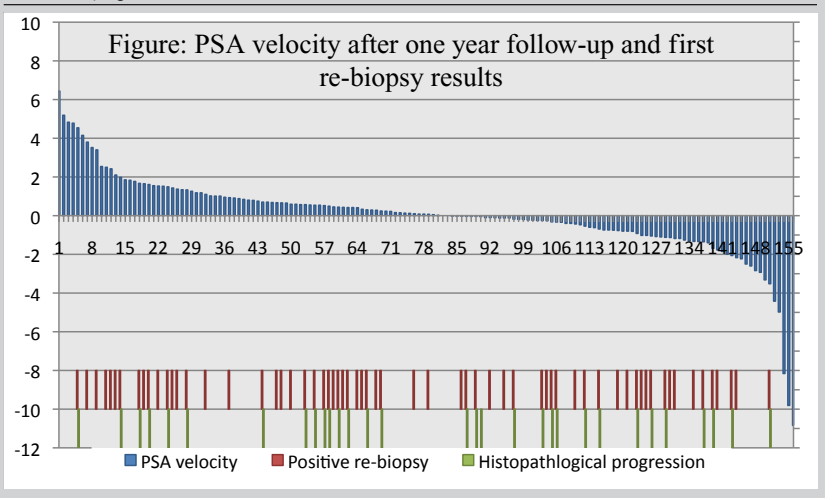
Introduction and Objective: A short PSA doubling time (PSAdt) is a progression criterion for prostate cancer (PCa) patients on active surveillance (AS) while long and/or negative PSAdt is believed to be reflecting slow progression and indolent disease. We wanted to investigate the risk of histo-pathological progression at re-biopsy in patients on AS stratified by whether PSAdt after one year (median 5 PSA measurements) was positive or negative.
Materials and Methods: *Patients with low-risk PCa were prospectively followed on AS. Patients eligible for AS at our institution were patients with biopsy Gleason score ≤ 6, PSA ≤ 10, cT < 2a, < 50% tumor in any one core and ≤ 3 positive cores. A few patients with worse diagnostic characteristics were included in the study. Patients were followed with digital rectal examination and PSA every three months and re-biopsied after one year of observation.* Histo-pathological progression on re-biopsy was recorded, if either Gleason score ≥ 3+4 or the number of positive cores increased > 3.
Results: Of the 156 patients included, 84 had a positive PSAdt while 72 patients had a negative PSAdt during the first year on AS. No statistical difference between the two groups' baseline data was found. There were 131/156 (84%) who had a re-biopsy where 31/131 (24%) had histo-pathological progression, see figure. The estimated 5-year probability of remaining on AS was 58.1% (95% CI: 50.0;70.2) in patients with positive PSAdt(1yr) compared to 62.5% (95% CI: 48.7;76.3) for those with a negative PSADT(1yr) (P= 0.23).
Conclusions: Patients with negative PSAdt(1yr) seems to have the same risk of histo-pathological progression and AS failure as patients with positive PSAdt(1yr). Our results support the use of re-biopsy with regular intervals in PCa patients managed with AS.

POD-08.05, Figure 1.



POD-08.06

Is Pelvic Lymph Node Dissection Needed for Low-Risk Prostate Cancer at Radical Prostatectomy?

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Introduction and Objective: To determine the necessity of pelvic lymph node dissection (PLND) for low-risk prostate cancer at radical prostatectomy, we compared patients with low-risk disease who underwent PLND with those who did not undergo PLND at the time of radical prostatectomy.

Materials and Methods: Medical records for 1,268 consecutive patients undergoing open retropubic radical prostatectomy between January 2000 and December 2009 who had not undergone neoadjuvant therapy were retrospectively reviewed. The low-risk subgroup (n=222; prostate-specific antigen (PSA), ≥10 ng/ml, biopsy Gleason score (GS) ≤6, clinical T1c or T2a) were classified according to whether they underwent PLND (PLND group, n=147) or did not (no-PLND group, n=75). Frequency of lymph node metastases in the PLND group, 5-year PSA recurrence-free survival in both groups and operative morbidities in both groups were analyzed.

Results: The PLND group was likely to be older and show clinical T2a. Lymph node metastasis was detected in only one case from the PLND group (0.7%). With a median follow-up of 26 months for the no-PLND and 60 months for the PLND group, 5-year PSA recurrence-free survival rates were 87.1% and 87.6%, respectively (P=0.65, log-rank). Operative time, blood loss, Clavien classification and lymphatic morbidities did not differ significantly between the groups.

Conclusions: PLND can be spared at radical prostatectomy for low risk disease, since its diagnostic and therapeutic value is poor.

POD-08.07

Transrectal HIFU for the Treatment of Localized Prostate Cancer: 13-Year Experience

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Introduction and Objective: We report on 13 years' experience of high-intensity focused ultrasound (HIFU) in the treatment of localized prostate cancer.

Materials and Methods: Eight hundred and eighty-four men with stage T1c-T3N0M0 prostate cancer treated with Sonablate® (SB) devices between 1999 and 2010 were included. All patients were followed for more than 2 years. The patients were divided into three groups: in the first group, 418 patients were treated with SB200 and 500 from 1999 to 2006; in the second group, 262 patients were treated with SB 500 ver. 4 from 2005 to 2009; in the third group, 204 patients were treated with SB 500 TCM from 2007 up to present. Biochemical failure was defined according to the Phoenix definition (PSA nadir + 2 ng/ml).

Results: The mean age, PSA, Gleason score, operation time, and follow-up period in each group were 68, 66 and 67 years, 11.2, 9.7 and 9.2 ng/ml, 6.2, 6.6 and 6.7, 167, 101 and 106 min, and 56, 48 and 36 months, respectively. The biochemical disease-free rate (bDFR) in each group at 5 years was, respectively, 54%, 62% and 83%, and was 50% at 10 years in the first group (p<0.0001). The bDFR in patients in the low-, intermediate-, and high-risk groups in all patients at 10 years were 71% and 58%, 44%, respectively (p<0.0001). The BDFR in patients in the low-, intermediate-, and high-risk groups in the SB500 TCM group at 5 years were 97%, 83%, and 73% (p=0.0040). The negative prostate biopsy rates in 3 groups were 82%, 92% and 88%, respectively. As post HIFU complications, urethral stricture, acute epididymitis and urinary incontinence were noted in 17.4%, 5.6% and 1.9%, respectively. Rectourethral fistula was occurred in 0.5% in the first HIFU and 3.2% in repeat HIFU cases, Postoperative erectile dysfunction was noted in 27% of patients at 2 years after HIFU.

Conclusions: HIFU therapy appears to be minimally invasive, efficacious, and safe for patients with localized prostate cancer. Technological advances as well as cultural and economic vectors have caused a shift from to minimally invasive techniques.

POD-08.06, Table 1.

	no PLND	PLND	
Number of patients (n)	75	147	*P*
Median age (years)	63	67	*< 0.01*
Median PSA (ng/ml)	5.9	6.4	*0.15*
Cinical T			
cT1c	54.7%	70.1%	*< 0.01*
cT2a	45.3%	29.9%	
Final Gleason score			*0.04*
≤ 6	45.3%	28.6%	
7	48.0%	61.2%	
≥ 8	6.7%	10.2%	
Positive surgical margin	9.3%	19.0%	*0.05*
SV invasion	1.3%	1.4%	*0.99*
Lypmh node involvement	*n.a.*	0.7%	
5-year PSA recurrence-free survival	87.1%	87.6%	*0.65 (log rank)*

	no PLND	PLND	
Surgical outcomes available (n)	42	22	*P*
Median operative time (min)	234	239	*0.33*
Median blood loss (ml)	990	983	*0.36*
Nerve sparing			*0.03*
none	0.0%	4.5%	
unilateral	7.1%	27.3%	
bilateral	92.9%	68.2%	
Clavien classification			*0.38*
1 or 2	26.2%	22.7%	
3	7.1%	0.0%	
Lyphatic morbidities			*0.64*
1 or 2	2.4%	4.5%	
3	0.0%	0.0%	

POD-08.08
Expansion of Lymph Node Dissection Can Enhance Survival in Patients with Intermediate and High Risk Prostate Cancer

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Introduction and Objective: The aim of our study was to evaluate biochemical progression-free survival (PFS) in intermediate and high risk prostate cancer (PC) patients who had undergone radical prostatectomy (RPE) and PLND.
Materials and Methods: Retrospective analysis of database from 595 patients after RPE and PLND since 2006 till 2011 in our institution was performed. There were 288 consecutive patients with intermediate and high risk PC (PSA>10 ng/ml, clinical stage ≥T2b, biopsy Gleason score ≥7, percentage of positive biopsy cores ≥50%) included for analysis. According to anatomical regions of PLND performed, patients were divided in to 3 groups: standard PLND was performed in 39 (13.5%) patients; extended PLND (E-PLND) in 137 (47.6%) and super extended PLND (SE-PLND) in 112 (38.9%) patients. LN metastases were verified in 2 (5.1%), 26 (18.9%) and 38 (33.9%) patients respectively (p=0.003). Patients with LN metastases were excluded from the further survival analysis. Mean number of LN removed was 13.6±6.9 (4-31); 23.3±7.2 (12-56) and 29.1±7.9 (15-52) respectively (p<0.0001); mean PSA level was 11.1±5.6 ng/ml; 13.7±9.3 ng/ml and 16.4±10.6 ng/ml respectively (p=0.04); mean percentage of positive biopsy cores was 43.4±27.5%; 47.2±23.9% and 55.2±27.3% respectively (p=0.05). Biopsy Gleason score was significantly more favorable in S-PLND group of patients (p=0.0002). Biochemical recurrence was assessed as elevation of PSA>0.2 ng/ml on three consecutive measurements.
Results: Median follow up time was 25 months (3-72 months). During this period biochemical recurrences were observed in 10(27%) patients in S-PLND group, in 13(11.7%) patients in E-PLND and in 8(10.8%) patients in SE-PLND group. Cumulative 3-year PFS rate was 64.6±10.1% for patients in S-PLND group, 84.4±7.7% in E-PLND group and 81.49±9.9% in SE-PLND group (p=0.035). More extended PLND with removing >20 LN was associated with significantly increasing PFS rates. Comparing cumulative 38-month PFS in subgroup of patients with ≤10 and >20 LN removed PFS rates were 36.9% and 76.5% respectively (p=0.003).
Conclusions: E-PLND and SE-PLND are more accurate for LN staging in PC patients. S-PLND is associated with worse survival and should not be performed in cases of intermediate and high risk PC. Extensive E-PLND and SE-PLND with removing >20 LN could be recommended in this group of patients to achieve better PFS.

Podium Session 9: Prostate Cancer Therapy
Wednesday, October 3
13:15-14:45

POD-09.01

Safety and Efficacy of the Investigational Agent Orteronel (TAK-700) Without Prednisone in Nonmetastatic Castration-Resistant Prostate Cancer (nmCRPC) Patients with Rising Prostate-Specific Antigen (PSA): Updated Results from a Phase 2 Study

Hussain M[1], Corn P[2], Michaelson D[3], Hammers H[4], Alumkal J[5], Ryan C[6], Bruce J[7], Moran S[8], Lee S[8], Borgstein N[8], **Webb I**[8], Mortimer P[9], George D[10]

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Introduction and Objective: Orteronel is an investigational, oral, non-steroidal, selective 17,20-lyase inhibitor that suppresses androgen production. Orteronel has less effect on cortisol synthesis than similar agents due to limited inhibition of 17α-hydroxylase, thus potentially allowing for steroid-free dosing. Orteronel 300 mg BID was examined in patients with nmCRPC and rising PSA.

Materials and Methods: Eligible patients had nmCRPC with PSA ≥2ng/mL (PSA ≥8ng/mL if doubling time >8 months), and surgical/medical castration, with testosterone <50ng/dL. Prior chemotherapy, ketoconazole, or concomitant corticosteroids were excluded. Patients received orteronel 300 mg BID and continued treatment without steroids until PSA progression, metastases, or unacceptable toxicity. The primary endpoint was the percentage of patients achieving a PSA level ≤0.2ng/mL after 3 months. Secondary/exploratory endpoints included safety, PSA declines of 50%, 90%, time to metastases, changes in endocrine markers, and circulating tumor cells (CTCs).

Results: There were 39 patients enrolled: median age 71 years, ECOG PS ≤1, median PSA 12.1ng/mL (range 2.6–67.8), testosterone 7.9ng/dL (1.4–17.3), ACTH 19ng/L (n=33; 0–47). Median cycles=6 (1–17); 3 patients had a dose reduction and 8 discontinued due to adverse events (AEs). There were 16 patients (drug-related=14) who had Gr≥3 AEs; Gr≥3 AEs observed in ≥5% were hypertension (13%), dyspnea (8%), fatigue, hypokalemia, pneumonitis (5% each). No patient required corticosteroids for mineralocorticoid syndrome. At 3 months, 6 patients (16%) achieved PSA ≤0.2ng/mL; PSA50 and PSA90 rates were 76% and 32%, respectively; median PSA declined by 83% (n=34); median testosterone declined by 89% to 0.78ng/dL (n=31), and median ACTH increased by 171% to 43ng/L; median cortisol declined by 21%. At 6 months, PSA50 and PSA90 rates were 45% and 21%, respectively. Kaplan-Meier estimate of median time to PSA progression was 14.8 months; 97% of patients were free from metastases at 6 months (17/39 were treated >6 months). Seven patients had >1 baseline CTC/7.5mL; 1 patient with a CTC count ≥5 converted to <5/7.5mL; 6 had 1–4 baseline CTCs; none converted to ≥5 during treatment.

Conclusions: Orteronel without steroids produces marked and durable declines in PSA and testosterone, has manageable toxicities, and is feasible in patients with nmCRPC.

POD-09.02

Immunohistochemical Expression of BRCA1 and Prostate Cancer Progression in a Large Radical Prostatectomy Cohort

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Introduction and Objective: *BRCA1* encodes a tumor suppressor protein that plays an important role in DNA repair. Although *BRCA1* mutations are known to promote carcinogenesis, the role of BRCA1 protein in prostate cancer progression and survival is poorly understood. The objective of this study was to determine the association between tumor expression of BRCA1 protein and survival in men with prostate cancer.

Materials and Methods: Immunohistochemical staining for BRCA1 protein was performed in archival tumor tissue from radical prostatectomy specimens of 589 men participating in the Health Professionals Follow-Up Study. BRCA1 expression was graded as either present or absent by dedicated study pathologists. Tumor proliferation was assessed quantitatively using immunostaining for Ki67. Study participants were followed prospectively from the date of diagnosis until the development of distant metastases or death through 2011. Proportional hazards regression was used to evaluate the association between BRCA1 expression and lethal prostate cancer.

Results: Immunohistochemical staining was positive for BRCA1 protein in 60 patients (10.2%).There was a strong correlation between BRCA1 expression status and Gleason grade, with BRCA1-positive tumors being of higher grade than BRCA1-negative tumors (p_{trend}=0.01). Likewise, tumors expressing BRCA1 exhibited a higher proliferative index (p_{trend}=0.005). During a median follow-up time of 13.8 years, 58 men (11.0%) in the BRCA1-negative group and 14 men (23.3%) in the BRCA1-positive group developed metastases or died of prostate cancer-related causes. On unadjusted analyses, there was a strong positive association between BRCA1 protein expression and risk of lethal prostate cancer (HR 2.26, 95% CI 1.26–4.04, p=0.006). After adjusting for age at diagnosis and Gleason score, there remained a higher risk of lethal prostate cancer in BRCA1-positive tumors, although this association was not statistically significant (HR 1.68, 95% CI 0.93–3.02, p=0.08). This association was not significantly attenuated by further adjustment for Ki67 proliferative index.

Conclusions: BRCA1 positive prostate tumors are characterized by dedifferentiation and a high proliferative index, and may be an independent predictor of cancer progression. The biological mechanisms by which BRCA1 may promote tumor survival and the role of BRCA1 expression in guiding therapy in patients with castrate-resistant prostate cancer deserve further study.

POD-09.03

Does Private Health Insurance Status Affect the Pathological Outcomes in Patients Undergoing Radical Prostatectomy in the United Kingdom?

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Introduction and Objective: National Health Service provides a range of health services, the majority of which are free at the point of use to residents. Less than 12% of the British population has private health insurance. We analysed our hypothesis that patients with private health insurance with prostate cancer present with more favourable pathological outcomes.

Materials and Methods: Data was analysed from 436 patients undergoing radical prostatectomy from 2002 – 2010. There were 328 patients under the NHS and 108 men had private health insurance. The two groups were compared for different variables including age, PSA, Gleason score, number of cores involved, maximum tumour length on biopsy core, imaging and pathological outcomes (Gleason score, tumour volume, positive margins, specimen weight, prostate gland volume). Statistical evaluations were carried out using Mann-Whitney U test and chi squared.

Results: The patients with private health insurance presented at a younger age (63 vs 61, p=0.008) and lower mean PSA (9.5 vs 8.05, p=0.0005). However, there was no significant difference in Max % of core involved (45% vs 27%, p=0.27 (7mm v 4mm) or number of cores involved (4 v 4 P = 0.22). Staging investigations showed a significant difference (45% v 77% P <0.001). There was no statistically significant difference of biopsy Gleason sum. Specimen weight showed barely a difference (53g v 60g P =0.038). Mean prostatic volume (42cc v 37cc P=0.0207.) Importantly there was significant difference in the total tumour volume (8cc vs 5cc, p=0.002). There was no statistically significant difference across the range of final Gleason sum or positive margin rate, although the invasion of the seminal vesicles was higher in the NHS patients (9% vs 1.8% P <0.025).

Conclusions: Patients with private insurance were younger, had a lower presenting PSA. There was significantly higher tumour volume and higher incidence of seminal vesical invasion in the NHS patients. We have not yet seen a difference in BCR and CSS. Research needs to be carried out to explain these differences. In spite of uninhibited access to the NHS, insurance status did represent a factor in predicting final pathological outcomes after RRP.

POD-09.04

MDV3100, an Androgen Receptor Signaling Inhibitor, Improves Overall Survival in Patients with Prostate Cancer Post Docetaxel: Results from the Phase 3 AFFIRM Study

Mulders P[1], Scher H[2], Fizazi K[8], Saad F[3], Taplin M[4], Sternberg C[5], Miller K[6], De Wit R[9], Hirmand M[7], Selby B[7], De Bono J[10], for the AFFIRM Investigators
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Introduction and Objective: MDV3100, a novel androgen receptor signaling inhibitor (ARSI), competitively inhibits binding of androgens to the androgen receptor (AR), inhibits AR nuclear translocation, and inhibits AR association with DNA (Tran et al, Science. 2009;324:787). MDV3100 was selected for development based on activity in prostate cancer cell model systems with overexpressed AR, and was found to be active in a Phase 1-2 trial enrolling pre- and post-chemotherapy treated patients with progressive castration resistant disease (CRPC) (Scher et al, Lancet. 2010;375:1437). The AFFIRM trial evaluated whether MDV3100 could prolong overall survival in patients with metastatic CRPC post docetaxel-based chemotherapy.

Materials and Methods: In this randomized, double-blind, placebo-controlled, multinational Phase 3 study (NCT00974311), metastatic CRPC patients who had received ≤2 regimens of chemotherapy, 1 with docetaxel, were randomized 2:1 to MDV3100 160 mg/day or matching placebo. Treatment with corticosteroids was not required, but allowed. Patients were stratified by baseline Eastern Cooperative Oncology Group performance status and mean brief pain inventory score. The primary endpoint was overall survival. Secondary efficacy endpoints included radiographic progression-free survival, time to first skeletal-related event, time to prostate-specific antigen (PSA) progression.

Results: There were 1,199 patients randomized between Sept 2009 and Nov 2010**.** Based on a planned interim analysis at 520 death events, the Independent Data Monitoring Committee (IDMC) recommended the study be halted and eligible placebo patients offered MDV3100 due to a significant survival benefit. Patients on MDV3100 had a median overall survival of 18.4 months, an increase of 4.8 months compared to placebo (13.6 months), $P<0.0001$, hazard ratio 0.631. All secondary endpoints were met, additional analyses are ongoing and results will be presented at the meeting including time to progression (radiographic and PSA) and safety.

Conclusions: MDV3100, a novel ARSI, significantly improved overall survival in men with post-docetaxel CRPC reducing the risk of death by 37% compared to placebo.

**Previously presented at: American Society of Clinical Oncology Genitourinary Cancers Symposium, February 2, 2012, San Francisco, CA and European Association of Urology, February 28, 2012, Paris, France.*

POD-09.05

PCA3 Molecular Urine Assay Pivotal U.S. Clinical Study Confirms Utility for Predicting Repeat Biopsy Outcome

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Introduction and Objective: The PCA3 molecular urine assay has demonstrated utility to supplement existing methods for guiding repeat prostate biopsy (rBx) decisions. In this multi-center prospective pivotal clinical study, we evaluated its clinical performance in men undergoing rBx.

Materials and Methods: Subjects were enrolled from 14 community-based urology clinics, group health organizations and academic institutions. The study population consisted of 466 men ≥50 years

of age who had ≥1 prior negative prostate biopsy and were recommended for rBx. Urine samples were collected before biopsy, and PCA3 scores were determined using the PROGENSA® PCA3 assay. PCA3 scores were correlated with rBx outcome. Multivariable logistic regression (LR) was performed with factors for PCA3 score, age, race, serum PSA level, DRE result, family history and number of previous negative biopsies.

Results: Prostate cancer was diagnosed in 21.9% (102/466) of subjects. Men with PCA3 scores <25 were 4.6 times more likely to have a negative rBx than men with PCA3 Scores ≥25. At this cutoff, the NPV was 90% (table); 8 high grade (Gleason sum ≥7) cancers would have been missed whereas 50% of rBx would have been avoided. The PCA3 score significantly increased the predictive accuracy of the LR model: at 90% sensitivity, addition of the PCA3 score to the LR model increased specificity by 22.6 (90% CI: 9.0-33.1), PPV by 6.4 (2.8-9.6) and NPV by 7.1 (1.7-13.4) percentage points relative to the LR model without the PCA3 score.

POD-09.05, Table 1. Performance characteristics of PCA3 at a cutoff of 25 (95% CI)

Sensitivity	Specificity	NPV	PPV	Odds ratio
77.5%	57.1%	90.0%	33.6%	4.6
(68.4-84.5)	(52.0-62.1)	(86.5-93.1)	(30.0-37.2)	(2.75-7.62)

Conclusions: The clinical utility of the PROGENSA PCA3 assay for predicting rBx outcome was confirmed in a multi-center pivotal U.S. clinical study. Lower PCA3 scores were associated with a decreased likelihood of a positive rBx. The NPV was 90% at a PCA3 score cutoff of 25; at this cutoff only 8 high-grade cancers would have been missed whereas 50% of rBx could have been avoided.

POD-09.06

Overall Survival Benefit with Sipuleucel-T by Baseline PSA: An Exploratory Analysis from the Phase 3 IMPACT Trial

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Introduction and Objective: Sipuleucel-T is an autologous cellular immunotherapy approved for the treatment of asymptomatic or minimally symptomatic metastatic castrate-resistant prostate cancer. In the pivotal phase 3 IMPACT trial (NCT00065442), sipuleucel-T showed a 22.5% reduction in risk of death vs the control group (hazard ratio [HR]=0.775 [95% CI 0.614, 0.979]; P=0.032). A prespecified subgroup analysis for baseline prognostic variables showed homogeneous treatment effects consistently favoring sipuleucel-T. In patients (pts) with baseline PSA below vs above the median, there was a trend toward greater treatment effect (HR=0.685 vs. 0.865). In this exploratory analysis, we further sub-divide baseline PSA into quartiles to evaluate potential treatment effect patterns.

Materials and Methods: The analysis included all randomized pts from the IMPACT trial (N=512). Pts were categorized by baseline PSA quartile, as well as by median for other baseline prognostic variables (i.e., ECOG, LDH, PAP, ALP in bone-only disease, and Hgb). Median overall survival (OS) was estimated using the Kaplan-Meier method. HR estimates were obtained from a Cox model.

Results: The HRs suggest a consistent treatment effect in all subsets, although there is inadequate power to show significant results within each quartile. There was a trend toward an increased magnitude of treatment benefit in pts with a lower baseline PSA. The median OS for sipuleucel-T vs control in the lowest quartile was 41.3 vs. 28.3 months (HR=0.51[95% CI 0.31, 0.85]). Results for other baseline prognostic variables also suggest a trend toward greater benefit in subjects with better prognostic features. However, results for baseline Hgb indicated an opposite trend.

Conclusions: Although not adequately powered for significance, the results of this analysis support a consistent OS benefit with sipuleucel-T across PSA quartiles. The greater magnitude of benefit in pts with lower baseline PSA suggests that pts with less advanced disease may benefit more from treatment with sipuleucel-T.

POD-09.06, Table 1.

	Baseline PSA (ng/mL)			
	≤ 22.1 (n=128)	>22.1–50.1 (n=128)	>50.1–134.1 (n=128)	>134.1 (n=128)
Median OS, mos				
Sipuleucel-T	41.3	27.1	20.4	18.4
Control	28.3	20.1	15.0	15.6
Difference	13.0	7.1	5.4	2.8
HR (95% CI)	0.51 (0.31, 0.85)	0.74 (0.47, 1.17)	0.81 (0.52, 1.24)	0.84 (0.55, 1.29)

POD-09.07

ProDiet: The Feasibility of a Randomised Controlled Trial of Dietary Interventions for Men at Elevated Risk of Prostate Cancer

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Introduction and Objective: Prostate specific antigen (PSA) testing identifies many men with elevated levels just below biopsy thresholds and others with negative biopsies. However, these men are at increased risk of subsequent prostate cancer diagnosis. The ProDiet study aimed to establish the feasibility of utilising dietary interventions in these men within a randomised trial.

Materials and Methods: A total of 469 men aged 50-69 years with PSA levels between 2.0-2.95 ng/ml or a negative biopsy result were identified through community-based PSA testing in the ProtecT (Prostate cancer testing and Treatment) randomised trial of localised prostate cancer treatments (ISRCTN 20141297). Men were randomised to daily lycopene (44 to active lycopene, 44 to placebo capsules, 45 to lycopene-rich diet) and green tea (45 to active supplement, 45 placebo capsules, 43 drink) in a 3x3 factorial design for 6 months. Men completed dietary records (FFQ) and questionnaires at enrolment and 6 months after randomisation. Trial outcomes included recruitment, retention and adherence rates, PSA and serum levels of green tea and lycopene compounds at baseline and at 6 months.

20 participants were interviewed in a nested qualitative analysis. ProDiet trial ISRCTN 95931417.
Results: A total of 133 men were randomised (28%) and 124 completed follow-up (93%). Compliance with interventions was high, 93/112 (83%) stated that they took all the capsules and 75/112 (67%) adhered to the dietary options. Interviews revealed that men regarded the interventions as 'simple' and 'straightforward' with routines established around mealtimes to increase adherence. The interventions were palatable with few side effects, which were usually transient. There was little change in PSA levels over the six month study period. For example, with the green tea drink the mean PSA level at baseline was 3.84 ng/ml and 3.85 ng/ml at follow-up; with the lycopene rich diet, 3.37 ng/ml at baseline and 3.42 ng/ml at follow-up. Some men continued the interventions and most would consider participating in a longer trial.
Conclusions: High adherence to multiple dietary interventions suggested that a definitive dietary prevention trial for men with an elevated risk of prostate cancer is both feasible and acceptable.

POD-09.08
Biochemical Outcome after Radical Prostatectomy for High-Risk Localized Prostate Cancer
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Introduction and Objective: The optimal therapeutic strategy for high-risk localized prostate cancer (PCa) is controversial. Supported by randomized trials, the combination of external beam radiation therapy (EBRT) and endocrine therapy (ET) is advocated by many, while radical prostatectomy (RP) is regarded as primary therapy by others. Depending upon outcome, an important argument for surgery is that successfully operated patients are spared the side effects of ET. We report the outcome for high-risk localized PCa patients treated with RP in our department.
Materials and Methods: Of 1300 patients that underwent RP, 231 were identified as high-risk according to the D'Amico classification. Patients were followed for biochemical recurrence (BR) (defined as PSA≥0.2 ng/ml), metastatic disease and survival. No patients received adjuvant therapy before BR was confirmed. Uni- and multivariate analysis was performed with Kaplan-Meier and Cox proportional hazard models.
Results: Median follow-up was 4.4 years (range: 0.1-14.9). Survival estimates are presented in Table 1. In multivariate analysis extra capsular tumor growth, seminal vesicle invasion and young age were independently associated with higher risk of BR.
Conclusions: Our results confirm that a significant proportion of patients with high-risk PCa remain biochemically disease-free and without need for ET following RP as primary and only treatment. A large randomized study of RP as primary therapeutic strategy versus the combination of EBRT and endocrine therapy in patients with high-risk localized PCa seems warranted.

POD-09.08, Table 1. Estimates of survival after 10 years

	% survived	95% CI
Biochemical recurrence-free survival:	49 %	40-57%
Metastasis-free survival	81%	76-92%
Overall survival	84%	73-91%
Cancer-specific survival	90%	79-95%

POD-09.09
Dietary and Lifestyle Factors and Risk of Progression in Contemporary Active Surveillance Patients
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Introduction and Objective: Men diagnosed with prostate cancer frequently change their diet or lifestyle in an effort to decrease their risk of developing aggressive disease. Men managed with active surveillance (AS) may feel a greater need to modify risk factors because their cancer is untreated. We evaluated the influence of diet and lifestyle on risk of prostate cancer biopsy progression in the largest prospective AS cohort in the US.
Materials and Methods: Diet and lifestyle questionnaires were completed by AS participants at enrollment. Biopsy progression was defined as Gleason score 7 or higher, or increase in tumor volume at annual surveillance biopsy. We also evaluated progression indicated by upgrading only (Gleason $\geq$7). Analysis focused *a priori* on 38 nutrients/food groups, 9 vitamin supplements, 7 medication variables, and 2 lifestyle variables. Data were analyzed by Cox proportional hazards regression with results expressed as hazard ratio (HR) and 95% confidence interval (CI); dietary variables were adjusted for calories by the residual method.
Results: There were 736 men in the analysis, of whom 235 (32%) progressed. Median follow-up was 2.7 years. In multivariable analyses, current cigarette smokers had significantly increased risk of biopsy progression (HR=2.6, p=0.004) (full model in TABLE). When biopsy progression was confined to Gleason upgrading, use of aspirin for 3 or more years prior to diagnosis was associated with a significant 50% decreased risk of upgrading, HR=0.5, p=0.019. Diet variables and supplements were not associated with risk.
Conclusions: Cigarette smoking was significantly associated with risk of progression, and long-term use of aspirin prior to diagnosis was associated with decreased risk of upgrading. These associations have not previously been reported for progression of men in AS. Although these associations should be viewed with caution due to the large number of variables tested, their potentially important impact on risk requires validation.

Podium Session 10: Stones
Wednesday, October 3
13:15-14:45

POD-10.01
Effect of Alfuzosin in Preventing Double-J Stent Related Morbidity: A Prospective Randomized Study
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Introduction and Objective: Ureteral stents have been an important and indispensable urologic tool. Unfortunately, studies consistently show that many patients with a stent experience stent-related symptoms, of which the most common are flank pain, voiding symptoms, infection, encrustation. In the present study we conducted a randomized controlled study to evaluate the effect of alfuzosin in improving symptoms and quality of life in patients with indwelled double-J ureteral stents using specific questionnaire.
Materials and Methods: A total of 80 patients undergoing Double-J stent placement following various urological procedures were prospectively randomized into two groups. In group I, 40 patients were enrolled, who received alfuzosin. In group II, 40 patients were enrolled and they received a placebo. Pre-operative and operative parameters were noted and compared. At follow-up to assess the stent related morbidity all patients were asked to complete validated ureteral stent symptoms questionnaires (USSQ) 3 days and 10 days after stent insertion and 1 week after stent removal.
Results: The analysis of USSQ at post operative day 3 & 10 revealed significant difference in mean urinary symptoms' index, pain index score between group 1 & group 2 in favour of alfuzosin. Also patient receiving alfuzosin had their general health, work performance, quality of life better preserved.
Conclusions: DJ-stent related morbidity impairs general health, work performance & QOL. Administration of selective alpha-1 blocker alfuzosin can improve a subset of stent-related urinary symptoms and quality of life effectively, and may be given in routine clinical practice.

POD-10.02
Value of the Spot Urine Sample for the Metabolic Evaluation of Urolithiasis Patients
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Introduction and Objective: To compare between spot urine sample and 24-hours urine collection for the metabolic evaluation of urolithiasis patients and to study the variability of different urinary risk factors between the stone-formers and non-stone formers.
Materials and Methods: Two groups, 58 adult persons each were included in this study. Stone-formers (group 1) and non-stone formers group (group 2). Each one in both groups was subjected to clinical evaluation, laboratory investigations and radiological evaluation. For all, morning spot urine specimen and 24-hour urine collection was obtained at the outpatient clinic. Urinary risk factors (pH, creatinine, citrate, oxalate, calcium, uric acid and magnesium) were tested in 24-hour and spot urine in both groups.
Results: In group 1 43 (74.1%) males and 15 (25.9%) females were involved with the mean age of (42.52±10.699) years. While in group 2, 47 (81%) males and 11 (19%) females were involved with the mean age of (26.79±5.881) years. There was a significant difference between the body mass index (BMI) of the stone formers (29.976±8.56) kg/m2 and the non-stone formers (27.159±4.453) kg/m2 ($p<0.01$). The mean urine volume of non-stone formers (2462±352.349) ml/day was significantly higher than that of stone-formers (1575.86±645.174) ml/day ($p<0.01$). The pH of stone-formers was (5.77±0.67) and (5.75±0.6) in the 24-hour and spot-urine samples, respectively ($p<0.01$), while the pH of non-stone formers was (6.345±0.51) and (6.29±0.45) in the 24-hour and spot urine samples, respectively ($p<0.01$). In the stone-formers group, the mean excretion/day of calcium, oxalate, citrate, magnesium, was significantly higher in comparison to non-stone formers in both 24-hours urine and spot urine samples. There was normal urate excretion in both groups ($p<0.01$). The mean calcium excretion/day in the stone-formers (331.75±142.06) mg/day was significantly higher than that of non-stone formers (231.58±79.21) mg/day. The mean excretions of magnesium and citrate/day in the non-stone formers (127.89±24.84 and 2209.86±363.22) mg /day, were significantly higher than that of the stone-formers (40.02±23.11 and 502.27±300.44) mg/day for magnesium and citrate respectively. Consecutive observations and correlation of creatinine-corrected uric acid, calcium, magnesium, citrate and oxalate showed similar pattern between spot and 24-hours urine in the two study groups.
Conclusions: Morning spot urine analysis adequately correlates the conventional 24-hours urine collection for metabolic evaluation of urolithiasis patients.

POD-10.03
Asymptomatic Small (<5mm) Distal Ureteric Calculi Do not Need Follow-Up
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Introduction and Objective: The management of ureteric calculi is an ever-expanding expenditure for an acute urological service. The statistical probability of spontaneous ureteral stone passage is directly related to the distance of the ureter to be traversed and inversely related to stone size *(Wein: Campbell-Walsh Urology, 9th ed.)*. Previous research has demonstrated that up to 98% of distal ureteric calculi <5mm will pass spontaneously *(Segura et al. J Urol 1997; 158(5): 1915-21)*, and that at presentation >50% of all ureteric calculi are present in the distal ureter *(Rizvi et al. BJU 2002; 89(1):62-68)*. We set out to determine a safe, cost effective alternative approach to the management of small (<5mm) distal ureteric calculi.
Materials and Methods: A retrospective analysis of all ureteroscopic stone extractions performed over a 3 year period in Christchurch, NZ was undertaken. Data was collected from both the public and private hospitals, providing complete community capture. All radiology was reviewed to confirm calculi size and location. To determine if patients who required ureteroscopy could be identified by symptoms alone, a systematic chart review of outpatient clinical notes was performed. Patients were then contacted individually to confer accuracy of clinical notes. Patients were excluded from the study if they were deemed to have a complicated distal ureteric calculi. This included patients undergoing staged procedures for complex calculi, bilateral calculi, solitary kidneys, urosepsis, stones >4mm, and patients undergoing concomitant surgical procedures (eg. TURBT). A cost analysis of the follow-up of a trial of passage for an uncomplicated distal ureteric calculi including outpatient time, and follow-up imaging was then performed.
Results: A total number of 439 Ureteroscopic Stone extractions were performed

during the 3 year period. There were 161 ureteroscopies for distal calculi, and 26 of these for calculi <5mm in maximal diameter. Of these 14 were deemed to be "uncomplicated". All 14 patents reported symptoms significant enough to warrant further treatment. These include 13 patients with persistent pain, and 1 patient with a urinary tract infection and significant LUTS. The total savings from patients discharged from the emergency department who remain symptom free with uncomplicated distal ureteric calculi < 5mm in size without urology outpatient follow-up is estimated to be significant.
Conclusions: We have shown that over a 3-year period, all patients presenting with "uncomplicated" distal ureteric calculi <5mm requiring intervention were symptomatic prior to their treatment. Based on these findings patients in this subset do not require radiologic follow-up. This reduces urology outpatient clinic follow-up at a significant fiscal saving.

POD-10.04
Embryonic Natural Orifice Transumbilical Endoscopic Surgery for Pyelolithotomy and Ureterolithotomy
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Introduction and Objective: To evaluate the embryonic natural orifice transumbilical endoscopic surgery (E-NOTES) for pyelolithotomy and ureterolithotomy.
Materials and Methods: A total of 30 patients with renal pelvic or ureteral calculi underwent E-NOTES on 33 sides. Of them 12 were women and 18 were men. The mean age was 46.2 years (range 16 to 71 years). The calculi were found on left side in 12 cases, on right side in 15, and on both sides in 3. The calculi were 12 to 30 mm in diameters. Renal pelvic calculi occurred in 2 cases, upper ureteral calculi in 28. In these patients, 4 patients had experienced unsuccessful extracorporeal shock wave lithotripsy (ESWL), 1 unsuccessful ureterolithotripsy (URL), 1 ureteral perforation during URL. Under general anesthesia, the patients were positioned in lateral decubitus with affected side elevated. Three 5- mm trocars were inserted into the abdomen cavity at the medial margin of umbilicus. The method for pyelolithotomy and ureterolithotomy was same as the standard laparoscopy.
Results: All procedures were successfully performed, and the stones were successfully removed once time. The unilateral operative time was between 60 and 145 min with a mean of 75 min. The bilateral operative time was 205, 160, and 150 min, respectively. The intraoperative mean estimated blood loss was 30 ml (range 15 to 45 ml). There was no major complication during perioperation. The drainage at the umbilicus was removed after postoperative day 3 to 4. The hospital stay was from 5 to 7 days. During the follow-up (6 to 16 months), the incision at the umbilicus was not obvious, and no recurrent calculus and ureterostenosis was found.
Conclusions: The E-NOTES for pyelolithotomy and ureterolithotomy was safe, feasible and cosmetic. It is worth selecting the method to treat renal pelvic or ureteral calculus.

POD-10.05
Alpha Blockers Impact Stent-Related Symptoms: A Randomized, Double Blind Placebo Controlled Trial
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Introduction and Objective: Ureteral stents have become an indispensible tool for the urologist. However, they are often associated with very bothersome lower urinary tract symptoms. This study is conducted to evaluate the effect of Alfuzosin on urinary symptoms, quality of life and pain in patients following double-J ureteral stent placement in a randomized placebo controlled trial.
Materials and Methods: This study was conducted from July 2008 to May 2009. A total of 130 patients underwent placement of double J stent after retrograde semi-rigid ureteroscopy for ureteral stones. They were enrolled in the study and prospectively randomized in 2 groups. Group 1 (n=65) received Alfuzosin 10 mg once daily and group 2 (n=65) received placebo for one week. Both the groups also received standardized analgesia. The stent symptoms were measured and recorded one week following the procedure. Statistical analyses were performed using Chi-square test and student t test with $p<0.05$ considered as significant.
Results: The demographic profile including patient and stone related parameters were comparable. Group 1 had significantly less urinary symptoms ($p<0.05$). The QoL assessment was better in Alfuzosin arm than placebo ($p<0.001$). The mean pain score was 1.15 in group 1 and 3.89 in placebo group ($p < 0.001$). None of the patients in either of the arms withdraw from treatment; there were minimal adverse effects in the treatment arm. The limitation of the current work includes relatively smaller sample size, use of single type and make of stent.
Conclusions: Alfuzosin 10 mg once daily in patients with double J stent significantly decreases the bothersome urinary symptoms, besides decreasing significantly the pain associated with stent.

POD-10.06
Management of Urinary Stone Disease with ESWL: Experience of 3 Years with 24286 Treatments
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Introduction and Objective: To state the effectiveness of current EAU Guidelines on extracorporeal shock waves litotripsy as a treatment for urinary stones after 3 years of experience and 24442 treatments done with the mobile stone clinic.
Materials and Methods: The mobile stone clinic was established in 1992. This clinic is run jointly by a Urologist, an Engineer and a Radiologist and uses a Wolf Piezolith 3000. From Jan 2008 to August 2011, all the new patients receiving the indication to treat their urinary stones with ESWL, following EAU Guidelines, were enrolled. The treatment was on kidney, ureteric or bladder stones. These patients after treatment were followed with abdomen X-ray and Urinary US performed by a Radiologist who was not involved in the treatment. If the stones treated were no more observed in the follow up imaging the patient was considered stone free. When a partial treatment was observed a new ESWL, if indicated, was prescribed. Complications of stone disease were documented during the follow-up period.
Results: There were 13168 patients treated and followed in the mobile stone clinic for 3 years for an overall number of 24286 treatments. A total of 10508 had a stone on the right side and 13309 on the left side, 468 had bladder stone. The success rate on the first treatment was 71.68% and mainly on the distal ureter (81.3%). Success rate for upper, middle and lower calyx were high and evidenced no statistical difference (70.7%, 70.1% and 70.9%) Men were more affected (64%). The mean shock waves were 3358 for treatment. The worst success rate was for renal pelvis stones (63.4 %).
Conclusions: This study reports the

biggest ESWL case study to our knowledge. Besides the European Guidelines on urinary stones treatment this study underlines how ESWL can reach better results on the distal ureter. On upper, middle and lower calyx there is no difference.

POD-10.07

Stricture Ureter after Ureteroscopic Treatment for Ureteral Calculi: Multicenter Long-Term Prospective Study

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Introduction and Objective: Asymptomatic ureteral obstruction is rare, but it constitutes a potentially late complication after ureteroscopic stone removal. Our purpose is to determine the incidence of postoperative symptomatic and silent obstruction, and to assess the methods and time of follow-up for both uncomplicated and complicated ureteroscopic procedures in a large multicenter study.

Materials and Methods: A total of 1980 patients with complete follow-up underwent rigid or flexible ureteroscopy for ureteral calculi with/without lithotripsy in two large centers (Tanta University and Washington University). Extraction of the whole stone or its fragmentation to less than 2mm was considered a success. The follow-up period ranged from 12 to 68 months with a mean of 42 months. The first post-operative visit was usually at 4-6 weeks followed by 3-6 months postoperatively and yearly thereafter. Postoperative evaluation included assessment of pain by pain analogue scale and intravenous urography (IVU) or spiral CT scan.

Results: The overall success rate was 98.5%. The failure cases (30 cases) were related to the size of the stone (<1cm, 1-2cm and > 2cm) in 3, 11 , and 16 cases respectively. With these stone size parameters, the success rate was 99.6%, 98.8% and 92.7% respectively with statistically insignificant difference (P=0.06) between the first 2 groups and significant difference (P<0.0001) with the last group of stone size > 2cm. In 8 cases, perforation occurred, 4 of them (50%) developed ureteric stricture. Stricture was encountered in 12 cases (0.6%) detected during the radiologic follow-up at 6, 13, 18 months in 8,3 and one case respectively. Stricture ureter was seen in 4.4% of cases with stone size ≥ 2cm compared to 0.17% in patients with smaller stone size (P<0.001). Fourteen patients had recurrent renal pain (0.7%), 5 of them (35.7%) were nonobstructed on frequent radiological evaluation while in 9 cases pain was associated with obstruction compared to silent obstruction encountered in 3 cases (0.15%) on regular follow up. The negative and positive predictive values for pain were as 99.8% and 64.3%, respectively.

Conclusions: Our results indicate that radiologic surveillance for stricture formation and obstruction is mandatory in symptomatic cases after ureteroscopic stone removal. While surveillance up to 18 months is indicated in patients with history of intraoperative ureteral complications (perforation or false passage) and cases with stone size ≥ 2cm.